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Strategic Environmental Assessment for Preparation of the "Sector Study for Investment Demand in Integrated Solid Waste Management (ISWM) in Albania"

- Draft SEA Study -

9 November 2018

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ABBREVIATIONS

a	year
AD	Anaerobic Digestion
AKPT	National Territorial Planning Agency
AKUM	National Water Supply-Sewerage and Waste Infrastructure Agency
AKZM	National Agency of Protected Areas
ASIG	State Authority for Geospatial Information
BMW	Biodegradable Municipal Waste
cap	capita
CDW	Construction and Demolition Waste
CO_2	carbon dioxide
d	day
DCM	Decisions of the Council of Ministers
DLDP	Decentralization and Local Development Program
EC	European Commission
EU	European Union
eq.	equivalent
FLAG	Albanian Foundation for Local Autonomy and Governance
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographical Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GNP	Gross National Product
HHP	Hydro Power Plants
INSTAT	Albanian Institute of Statistics
IPPCD	Integrated Pollution Prevention and Control Directive
ISWM	Integrated Solid Waste Management
IU	INFRASTRUKTUR & UMWELT
IUCN	International Union for Conservation of Nature
KfW	KfW Entwicklungsbank
kg	Kilogram

LGUs	Local Government Units
MBT	Mechanical Biological Treatment
Mg	Megaton
MoIE	Ministry of Infrastructure and Energy
MoTE	Ministry of Tourism and Environment
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
MUD	Ministry of Urban Development
NAWSS	National Agency for Waste Supply and Sewerage
NGOs	Non-governmental organization
NEA	National Environmental Agency
NO_2	Nitrogen Dioxide
DeNOx	Denitrification
O_3	Ozone
PA	Protected Areas
PM	Particulate Matter
PPS	Plans, Programmes and Strategies
PRTR	Pollutant Release and Transfer Register
RDF	Refuse Derived Fuel
RTO	Regenerative Thermal Oxidation
SCR	selective catalytic reduction
SDC	Swiss Agency for Development
SEA	Strategic Environmental Assessment
SO_2	Sulfur Dioxide
SOER	State of Environment Report
SWM	Solid Waste Management
t	Ton
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNECE	United Nations Economic Commission for Europe
UTS	University of Technology, Sydney
WEEE	Waste Electrical and Electronic Equipment
WHO	World Health Organization

WI Directive	Waste Incineration Directive
WID	World Inequality Database
WM	Waste Management
WZ	Waste Zone

0 Non-technical Summary

0.1 Introduction as well as Outline and Objectives of the "Sector Study for Investment Demand in Integrated Solid Waste Management" (ISWM Investment Plan)

In recent years, considerable progress has been achieved in Albania regarding the development of the regulatory framework in accordance with European Union (EU) policies in the waste management sector. Implementation at the regional or local level and achievement of the agreed targets, however, is still lagging behind. The crucial point between planning and implementation is the sufficient availability/ capacity of resources. Thus, the specific objectives of the Sector Study are:

- to determine the proper methodology and technology for future investments in the SWM sector,
- to determine the proper costs and tariffs,
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments,
- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/ or disposal facilities,
- to propose necessary legal and institutional changes,
- to propose any other accompanying measures.

The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

The centrepiece of the Sector Study is a phased ISWM Investment Plan, which allows authorities to take solid decisions[1] considering long-term developments. The phases of the investment plan are defined as shown in the following table.

[1] Decision making is supported by an Excel-based ISWM Investment Planning Tool and a GIS database.

Phases of the investment plan

Phase	Period
Phase 1 (short-term)	2018 – 2022
Phase 2 (medium-term)	2023 – 2027
Phase 3 (long-term)	2028 – 2032

The executive summary of the Sector Study is attached in chapter 7.1 as Annex 1.

0.2 Environmental Baseline and Key Problems, including the Likely Evolution of the Environment without the ISWM Investment Plan

Environmental Baseline and Key Problems

Albania covers an area of 28,748 km². The country's coastline along the Adriatic and Ionian Seas has a length of 362 km. Albania has borders with Montenegro and Kosovo, Greece and Macedonia.

About half of the Albanian territory is covered by mountainous areas. A small part of these are high mountain regions. From the Shkoder Lake in the north to Vlora in the south, only a few kilometers wide alluvial soils stretch along the coastline, which in Central Albania extend to the great Myzeqe plain. On the coast there are numerous lagoons and wetlands.

Only the valleys, the downs, parts of the coastal plain and some plateaus allow a dense human settlement. There, the population density is relatively high, while other parts of the country are sparsely populated.

A small majority of the Albanian population lives in cities today. The largest Albanian cities are located in the western coastal lowlands. They have grown significantly in recent decades, while smaller settlement areas have lost inhabitants. Tirana in particular has expanded drastically and today forms a metropolitan area together with its suburbs and Durrës city.

Data on population and population development are the basis for calculation of current and future waste amounts, both generated and collected waste. These then form the basis for planning of adapted sustainable solid waste management systems.

The table below reports the population forecast by qarks, showing the assumed population for 2018 as well as for the last years of Phases 1 – 3.[2]

Population forecast by qarks

Qark	Population Forecast			
	2018	2022	2027	2032
Berat	159,629	151,851	143,087	135,283
Dibër	139,090	131,304	122,467	114,525
Durrës	334,298	348,156	366,324	385,480
Elbasan	329,358	321,261	311,871	303,252
Fier	360,686	354,527	347,408	340,909
Gjirokastër	90,379	85,687	80,846	77,101
Korçë	253,456	245,634	236,438	227,849
Kukës	87,290	83,206	78,524	74,272
Lezhë	155,560	152,568	149,150	146,072
Shkodër	245,350	239,796	233,491	227,859
Tiranë	944,494	1,007,636	1,092,782	1,185,418
Vlorë	247,774	250,328	254,065	258,418
ALBANIA	**3,347,364**	**3,371,954**	**3,416,451**	**3,476,438**

In the following table, the waste generation forecast is summarised at the qark level with reference to the same years as the population forecast.[3]

[2] Albania has several official sources that provide population data. The most commonly used are INSTAT (based on the Census) and the Civil Registry; however, their numbers differ considerably. The population data from the Civil Registry are generally much higher than the figures according to INSTAT. Therefore, the following correction factor developed by the Albanian Ministry of Finance has been applied to calculate population figures based on both INSTAT and Civil Registry: Census + (Civil Registry – Census) * 30 %.

[3] Based on the population forecast and assumed specific generated waste quantities in different settlement types the waste generation to be expected over the project period has been calculated.

Waste generation forecast by regions

Region	Waste Generation Forecast [Mg/a]			
	2018	2022	2027	2032
Berat	39,503	37,616	35,491	33,601
Dibër	26,585	25,097	23,408	21,891
Durrës	105,626	110,081	115,924	122,088
Elbasan	76,175	74,350	72,239	70,309
Fier	84,624	83,197	81,549	80,046
Gjirokastër	21,376	20,263	19,102	18,184
Korçë	62,575	60,733	58,571	56,558
Kukës	18,178	17,322	16,340	15,449
Lezhë	35,864	35,182	34,403	33,704
Shkodër	62,307	60,910	59,325	57,911
Tiranë	334,049	356,517	386,815	419,778
Vlorë	73,512	74,551	76,005	77,641
ALBANIA	**940,376**	**955,819**	**979,173**	**1,007,159**

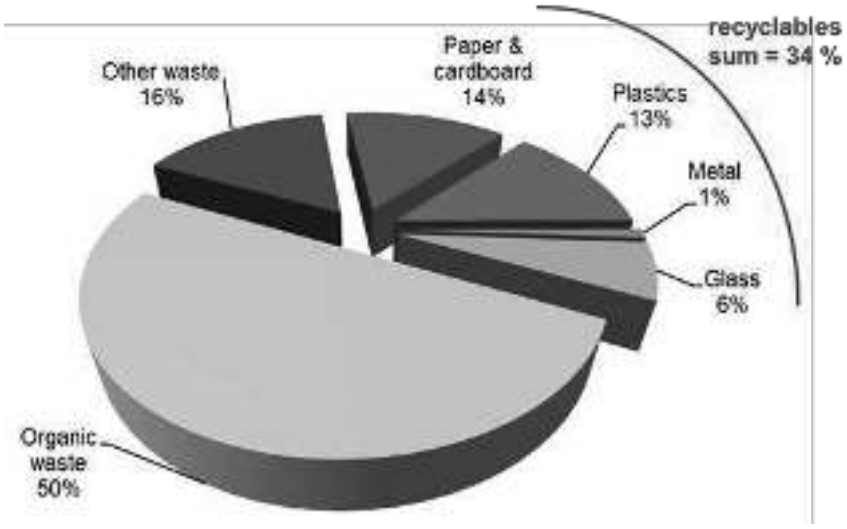
The following table shows the waste collection forecast at the level of the qark, referring to the same years as the population and waste generation forecasts.[4]

[4] In Albania the waste amounts collected differ from the amounts that are generated, because waste collection services do not cover all areas, especially in agricultural areas. Therefore, for the waste collection forecast, waste collection rates are assumed per settlement type. In addition, collection coverage is expected to increase by 3 % in agricultural areas and by 1 % in all other areas each year.

Waste collection forecast by regions

Region	Waste Collection Forecast			
	2018	2022	2027	2032
	[t/a]	[t/a]	[t/a]	[t/a]
Berat	26,516	28,010	29,679	30,874
Dibër	15,212	16,627	18,151	19,263
Durrës	84,703	92,839	103,772	115,614
Elbasan	49,120	53,542	58,817	63,430
Fier	54,557	59,809	66,187	71,992
Gjirokastër	14,674	15,398	16,269	16,934
Korçë	42,391	45,418	48,941	51,828
Kukës	11,114	11,968	12,915	13,678
Lezhë	24,016	26,495	29,500	31,768
Shkodër	42,490	45,847	49,899	53,348
Tiranë	278,345	312,167	359,150	411,808
Vlorë	54,544	59,603	66,147	72,659
ALBANIA	**697,681**	**767,723**	**859,428**	**953,196**

For waste composition the composition has been assumed, as shown in the following graphic.



Average composition of household and household like waste in Albania (weight-%)

Albania is rich in biodiversity and at the same time faces a range of environmental problems, including overgrazing, illegal clearing, poaching and overfishing. Albania has shares in Europe's Green Belt and lies in the Blue Heart of Europe.

The country is located in a species-rich region, which is mainly characterised by a rich flora with more than 3,200 species. Of these, more than 15 % are endemic in the Balkan Peninsula, and about 40 species are found only in Albania. Especially oak forests are typical and make up one fifth of the Albanian forests.

With many undeveloped areas, the country provides habitat for a variety of rare bird species and other animals, such as wolves, lynx and foxes or even brown bears. Albania has more than 350 native bird species. The wetlands on the coast and the lakes are important stops for many migratory birds. In Albanian waterbodies there are about 260 salt and freshwater fish species as well as turtles. However, biodiversity has declined in Albania over the last decades.

In Albania there are 14 national parks, covering about 6.9% of the national territory, and the marine reserve Karaburun-Sazan. The parks are a refugium for many plants and animals and are home to unspoiled landscapes. Some national parks are popular tourist destinations.

Agriculture is one of the most important economic sectors of Albania. About a quarter of the country's total area can be used for agriculture. However, the quality of the soil varies by region and location. Livestock farming dominates.

Agricultural activities contribute significantly to the Albanian GDP. More than half of the working population is engaged in agriculture but mostly in subsistence farming.

Albania has many raw materials/ resources: Chromium is one of the country's most important raw materials. In addition, there are larger deposits of nickel, copper, coal, gypsum, limestone, peat, basalt, sandstone and clay. However, many raw materials are rarely mined. Albania also has barely explored gas and oil resources.

All major rivers of Albania flow into the Adriatic Sea. With a length of 282 km, the Drin is the longest river in the country. Other major Albanian rivers are Mat, Shkumbin, Seman with Devoll and Vjosa. The short Buna drains the Shkodra Lake into the Adriatic Sea and forms part of the border with Montenegro.

In Albania, there is a Mediterranean climate with an annual average temperature of 16°C and an annual rainfall of just less than 1,200 mm. The winter is hard in the northern and eastern mountainous regions. In winter, many places in these areas are cut off from the outside world for months due to snow. In the south on the Ionian Sea, the climate is much milder. Still, in the coastal regions, precipitation is relatively high in winter.

Albania's architecture is rich in contrasts. Where historic city centres could be preserved, architectural achievements from Ottoman and Venetian times have been preserved. The southern Albanian cities of Berat and Gjirokastër have been designated UNESCO World Heritage Sites due to their architecture dating back to the Ottoman era. Very archaic forms of architecture (e.g. castles and, above all, castle ruins) can be found especially in the mountainous regions.

Albania is considered as one of the most polluted countries in Europe. Emissions and contaminated sites pollute waters, groundwater, soil and air, especially in densely populated areas. Among other things, this is due to inadequate solid waste collection and wild dumping.

Whereas city centres generally present themselves fairly clean, alongside roads and in the outskirts scattered waste as well as piles of waste and especially building rubble can be seen frequently. Reasons for the unsatisfactory situation, especially outside the main centres, are manifold. The municipalities refer to lack of funding as the main reason for poor waste collection. Also, payments to private contractors are often delayed due to a shortage of funds,[5] which negatively influences the motivation of the contracted companies to perform their work.

The environmental impacts of the present SWM system in Albania are described in a qualitative manner in the following table for the different activities of SWM.

Environmental and social shortfalls of the present SWM system

Subject	Environmental and social shortfalls
Poor waste collection rates	• Scattering of waste and indiscriminate dumping especially in areas so far not served by the waste collection system negatively affect the hygienic situation in the respective areas • Scattering of waste and indiscriminate dumping pollute soil, surface water and groundwater, as well as the landscape (including negative impact on tourism) • Waste washed into rivers, leads to blockages, and finally accumulates in the sea • Use of contaminated surface water or groundwater as drinking or irrigation water supports the entrance of contaminants in the human and/ or animal food chain

[5] Commission of European Communities, for and on behalf of the Government of Albania, Ref.: EuropeAid/124909/C/SER/AL: Albanian National Waste Strategy; April 2010; p. 28.

Subject	Environmental and social shortfalls
Poor recycling rates and lack of separate collection	• Exploitation of natural resources • Negative impact on climate (potential to avoid greenhouse gas emissions through recycling, methane emissions from organic waste) • Increased waste amounts for disposal
Disposal on poorly managed or uncontrolled dumpsites	• Methane gas emissions from landfills and dumpsites (greenhouse gas emissions) • Leachate emissions from landfills pollute soil, surface water and groundwater (with POP and other organic components, heavy metals and their salts) • Attraction of vectors which can transfer human and animal diseases • Dust and odour emissions impacting nearby sensitive receptors • Light components of disposed waste carried away by the wind pollute the surrounding areas • Landfill fires cause air pollution resulting from incomplete combustion (formation of toxic substances) • Pollution and health impaction from improper disposal of hazardous and infectious waste • Informal waste separation activities under very bad working conditions • In the absence of a fence and gate, access by domestic animals feeding waste materials (including paper and plastics) • Further conflicts related to poor site selection of disposal sites

In general it can be stated that improper disposal of waste is the most serious environmental problem of the current SWM in Albania. The main problems concern wrongly selected locations (e.g. in riverbeds, inside settlements), absence of measures to limit emissions (e.g. no coverage, burning), dumping into rivers and important water resources, poor operation of dumpsites where they exist (no budget, no equipment). Even where municipalities expend considerable effort on city cleaning, the situation at the dumpsites is mostly neglected. Besides shortage of funds, a general lack of awareness among the population and decision makers seems to be an important reason for this neglect. Even, at some of the landfills being constructed according to sanitary landfill standards, operation is incompliant with standards of the EU landfill directive thus losing the benefits gained from the investment.

Furthermore, pollution from dumpsites remains a major environmental risk in the country, even after closure. Though remediation can substantially reduce environmental pollution, and various feasibility studies already have been prepared, actual implementation of the proposed measures in most cases is pending. A complete inventory of dumpsites is

maintained by MoIE. Meanwhile MoTE together with DLDP is taking care of investment measures to rehabilitate dumpsites.

Likely Evolution of the Environment without the ISWM Investment Plan

As there is no comprehensive, nationwide modern waste collection, treatment and disposal in Albania, the consequences for the city sanitation, public health and the environment are serious. Through prevention, recovery and optimised disposal of waste resources and energy are saved and greenhouse gas emissions are reduced.

Albania is seeking membership in the EU and thus is in the process of adopting EU standards as national standards. Thus, for the Albanian Government an environmentally friendly, economically viable and hygienically safe collection and disposal of municipal waste has a high priority. To accelerate the process, Albania seeks support from international donors.

It can therefore be assumed that also without the ISWM Investment Plan, SWM in Albania would continue to develop and modernise. However, through the development of the ISWM Investment Plan a close coordination of long-term investment and financing planning between the Albanian Government, local government units and the donors shall be established, allowing for monitoring of long-term investment and financing.

In this regard the Investment Plan aims at eliminating spontaneous investments, which are not based on studies, or approved by policy makers, in order to prevent making public funds inefficient and creating hotspots that will require more funds and resources to return to normal acceptable conditions. The ISWM Investment Plan aims to ensure that a realistic, nationwide ISWM system is developed and updated on a regular basis.

Without this plan, there is a risk that investments will not be coordinated nationwide and/ or based on sustainable funding. As a consequence, there would be a risk that the risks described above would continue or could not be excluded in the long-term.

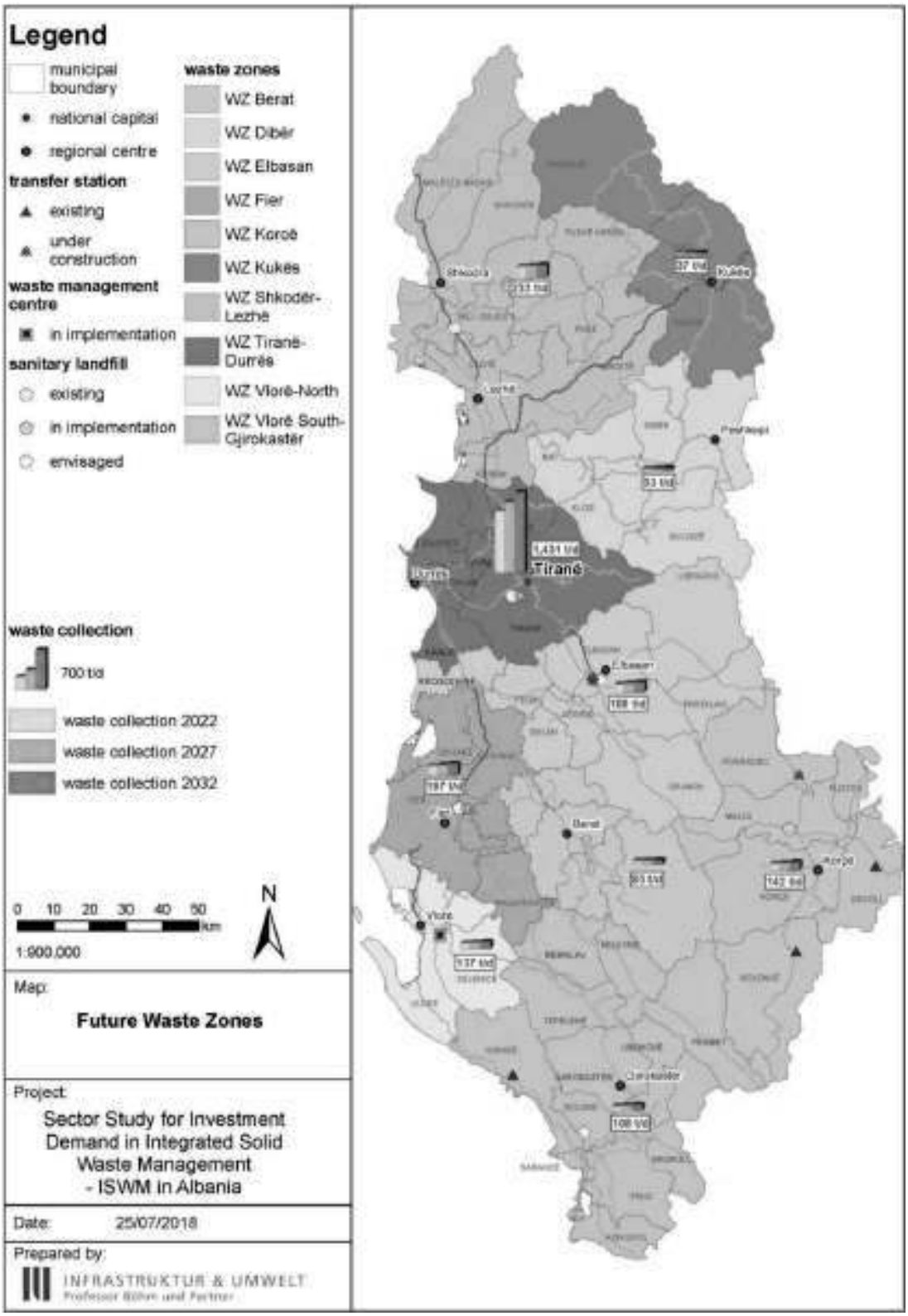
0.3 Summarised Overall Assessment of Environmental Impacts of the ISWM Investment Plan

For the whole of Albania, waste zones are defined so that all municipalities are assigned to a specific regional waste management facility.

Essential aspects for the designation of waste zones were the spatial structure and accessibility, the population size and development, the quantities of generated and collected waste. The total waste amount collected and delivered to a SWM facility within a

waste zone should be in the range of 100 Mg/d in order to ensure its economical operation.

Based on these considerations, a total of ten waste zones are demarcated in Albania, as shown in the following figure.



Future waste zones

The identification, description and assessment of the environmental impact are done based on SEA profiles for selected measures. The impacts and their significance are summarised in the following table.

Summarised overall environmental assessment

Type of measure/ abbreviation	Description	Overall environmental assessment
WZ	**Delineation of Waste Zones**	**+**
R	**Regional waste management components**	
R01	**Waste transfer and long-distance transport**	
R01-01	Ramp type transfer station	+
R01-02	Ramp type transfer station with compaction	++
R02	**Mechanical treatment (MRF)**	
R02-01	Dirty MRF	+
R02-02	Clean MRF	++
R03	**Mechanical biological treatment (MBT)**	
R03-01	MBT with anaerobic digestions	++
R03-02	MBT with stabilisation	++
R03-03	MBT with composting	O
R04	**Anaerobic digestion**	**++**
R05	**Waste incineration (with energy recovery)**	
R05-01	Moving grate incineration	O
R06	**Sanitary landfill (safe waste disposal)**	
R06-01	Sanitary landfill	O
R06-02	Landfill rehabilitation	+
L	**Local waste management components**	
L01	**Street cleaning**	
L01-01	Manual street sweeping	++
L01-02	Mechanical street sweeping	+
L02	**Waste collection (incl. separate collection)**	
L02-01	Collection of mixed waste	+
L02-02	Collection of organic waste	+
L02-03	Collection of dry recyclables	++
L03	**Composting (material recovery)**	

Type of measure/ abbreviation	Description	Overall environmental assessment
L03-01	Windrow composting plant	+
L03-02	Fully automated in-house plant	++
L04	**Inert waste management**	
L04-01	Mobile treatment	+
L04-02	Stationery treatment	++
L04-03	Landfilling	O

As shown in the table above, the measures of the ISWM Investment Plan have a positive or non-significant impact on the majority of subjects of protection of the SEA. However, the measures cannot only be assessed individually but must also consider systemic interactions in an integrated SWM system.

In addition, site selection plays an important role especially in the implementation of regional waste management components. A detailed site selection must therefore be carried out as part of subordinate planning and approval procedures, also considering respective environmental impacts.

1 Introduction

KfW Entwicklungsbank supports the Government of Albania in its efforts to improve the waste management situation in the country. Among others it has been agreed upon to prepare a "Sector Study for Investment Demand in Integrated Solid Waste Management in Albania", the so-called ISWM Investment Plan. The Albanian Project Partner is the Ministry of Infrastructure and Energy (MoIE).

Within the elaboration of the ISWM Investment Plan, a Strategic Environmental Assessment (SEA) shall be prepared.

INFRASTRUKTUR & UMWELT as Lead Consultant in cooperation with COWI and FLAG was commissioned with implementation of consulting services for the SEA.

1.1 Purpose of the SEA Study

As part of the preparation of the ISWM Investment Plan the MoIE is carrying out a SEA to consider its likely environmental effects. The SEA aims to

- Integrated environmental factors into the preparation of the ISWM Investment Plan
- Improve the ISWM Investment Plan and enhance environmental protection
- Increase public participation in decision making and
- Facilitate openness and transparency of decision-making.

The purpose of this Environmental Report is to

- provide information on the ISWM Investment Plan;
- identify, describe and evaluate the likely significant effects of the ISWM Investment Plan and its reasonable alternatives;
- provide an early and effective opportunity for the Consultation Authorities and the public to offer views on any aspect of this Environmental Report.

The key facts relating to the ISWM Investment Plan are set out in the table below.

Table 1 Key facts relating to the ISWM Investment Plan

Name of responsible authority	Ministry of Infrastructure and Energy (MoIE)
Title of plan	"Sector Study for Investment Demand in Integrated SWM in Albania (ISWM Investment Plan)"
Background	The ISWM Investment Plan is guided by the Albanian national SWM sector policies, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.
Subject	Municipal solid waste management
Period covered	The phases of the ISWM Investment Plan are as follows • Phase 1 (short-term): 2018 – 2022 • Phase 2 (medium-term): 2023 – 2027 • Phase 3 (long-term): 2028 – 2032
Area covered	Albania
Purpose and/or objectives	The specific objectives of the ISWM Investment Plan are: • To determine the proper methodology and technology for future investments in the Albanian SWM sector • To determine the proper costs and tariffs • To provide an objective, verifiable and transparent prioritisation system of ISWM infrastructure investments • To provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/ or disposal facilities • To propose necessary legal and institutional changes • To propose any other accompanying measures

1.2 The "Sector Study for Investment Demand in Integrated Solid Waste Management" (ISWM Investment Plan) and its Context

The purpose of this section is to explain the nature, contents, objectives and timescale of the ISWM Investment Plan.

1.2.1 Outline and Objectives of the "Sector Study for Investment Demand in Integrated Solid Waste Management"

In recent years, considerable progress has been achieved in Albania regarding the development of the regulatory framework in accordance with European Union (EU) policies in the waste management sector. Implementation at the regional or local level and achievement of the agreed targets, however, is still lagging behind. The crucial point

between planning and implementation is the sufficient availability/ capacity of resources. Thus, the specific objectives of the Sector Study are:

- to determine the proper methodology and technology for future investments in the SWM sector,
- to determine the proper costs and tariffs,
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments,
- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/ or disposal facilities,
- to propose necessary legal and institutional changes,
- to propose any other accompanying measures.

The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

The following figure shows the main working steps of the Sector Study as well as the project reports that were submitted at the end of the respective project phases.

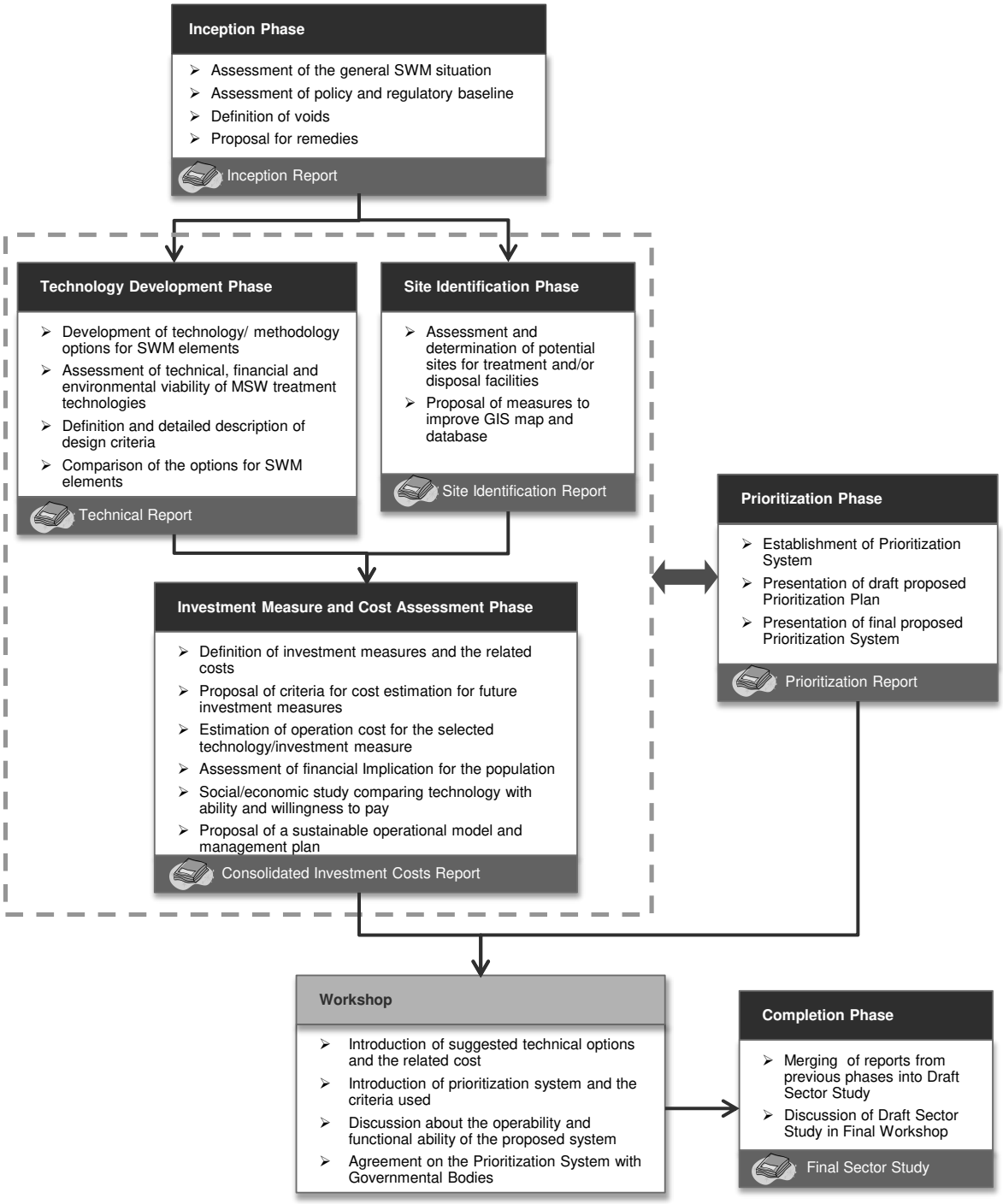


Figure 1 Phases and reports of the Sector Study

The strategic document that has to undergo the SEA is the result of the Completion Phase, the Sector Study. It merges the results of the previous phases. The centrepiece of the Sector Study is a phased investment plan, which allows authorities to take solid

decisions considering long-term developments. The phases of the investment plan are defined as shown in the following table.

Table 2 Phases of the investment plan

Phase	Period
Phase 1 (short-term)	2018 – 2022
Phase 2 (medium-term)	2023 – 2027
Phase 3 (long-term)	2028 – 2032

The executive summary of the Sector Study is attached in chapter 7.1 as Annex 1.

1.2.2 Relationship with Other Plans, Programmes and Strategies and Environmental Objectives

This section describes the policy context within which the ISWM Investment Plan operates, and the constraints and targets that this context imposes on the ISWM Investment Plan.

The following table summarises how the ISWM Investment Plan affects, and is affected by, other relevant plans, programmes and strategies (PPS) and environmental protection objectives.

Table 3 Relevant plans, programmes and strategies and environmental protective objectives, their relationship with the ISWM Investment Plan and resulting key requirements/ objectives

Name of plan, programme or strategy/ environmental protection objective	How it affects, or is affected by the ISWM Investment Plan in terms of SEA issues[6]	Key requirements/ objectives arising from the PPS
Comprehensive Planning (Spatial/ Territorial Planning)		
SHQIPERIA 2030, General National Spatial Plan (GNP) – First National Document on Spatial Planning 2015 – 2030, published by the former Ministry of Urban Development (today Ministry of Infrastructure and Energy) and the National Territorial Planning Agency; Approved by Council of Ministers Decision N° 881, dated 14/12/2016	Provides the reference strategic framework for sustainable territorial development until 2030, with a view to ensuring a balanced national economic and social development, sound management of its natural resources, environmental protection, all while ensuring the rational use of land. The ISWM Investment Plan must consider the principles and objectives of this plan.	• Establishment of special locations for the collection and processing of municipal solid waste
Integrated Cross-sectoral Plan for the Coastal Belt, published by the former Ministry of Urban Development (today Ministry of Infrastructure and Energy) and the National Territorial Planning Agency Approved by National Territorial Council with Decision N° 2, dated 14.06.2016	The plan provides the vision for the sustainable development of the Albanian Coastal Belt until 2030, bringing forward an integrated framework of the territorial developments and setting out a long-term quality development model for the Albanian shores, especially considering the sectors of tourism, environment, transport, energy, agriculture etc. as well as urban development. It seeks to harmonise economic investment demands with sustainable development goals/ needs considering protection and preservation of historical and cultural heritage, protected areas as well as to prevent any investments in areas with high risks to human life, nature and environment.	• Establishing of waste management networks based on distances and available capacities and referring to an integrated management hierarchy aiming at environmental protection and improving the living quality in every locality • Developing of waste management zones and implementation of urban and industrial waste management • Protection of underground and over-ground water resources from solid waste and stopping depositing wastes in drainage networks

[6] Biodiversity, flora, fauna, population, human health, soil, water, air, climatic factors, material assets, cultural heritage (including architectural and archaeological heritage), landscape, inter-relationship between these issues; secondary and cumulative effects.

Name of plan, programme or strategy/ environmental protection objective	How it affects, or is affected by the ISWM Investment Plan in terms of SEA issues[6]	Key requirements/ objectives arising from the PPS
Integrated Cross-sectoral Plan of Tiranë - Durrës Area, published by the former Ministry of Urban Development (today Ministry of Infrastructure and Energy) and the National Territorial Planning Agency Approved by National Territorial Council with Decision N° 3, dated 14.06.2016	Provides the vision for the development of the metropolitan region Tiranë - Durrës until 2030, for achieving the objectives of regional environmental quality through coordination of spatial plans and other important environmental strategies, such as waste.	• Providing treatment of solid waste, in regional schemes, as well as more efficient approaches in waste recycling schemes • Protection of the environment from solid waste, both within and outside the urban areas
National Plan for European Integration 2018 – 2020 Approved by DCM N° 246, dated 09.05.2018	The plan includes short-term and mid-term measures until 2020 for Albania to fully transpose the legal framework with EU acquis.	• Review of Albanian legal framework on waste management according to EU requirements.
Cross-cutting strategy for Rural Development and Agriculture Approved with DCM N° 709, dated 29.10.2014	The strategy aims to establish a strategic framework to face the challenges of the agricultural and agro-processing sector as well as the sustainable development of rural areas, considering economic, environmental and social aspects. One important topic of the strategy is to insure food quality and security.	• Measures for collection, transport and treatment of waste from the agricultural and agro-processing sector
Sectoral Waste Management Planning		
Albanian National Integrated Waste Management Strategy and Action Plan, prepared by a team of Albanian and international experts working for the Ministry of Tourism and Environment with Technical Assistance support from the German Development Cooperation	The Albanian Waste Management Strategy and Action Plan is one of the guiding documents for Municipal Solid Waste Management in Albania. It is currently elaborated under the MoTE, aiming to provide practical solutions for • Meeting the specific obligations of the EC waste management aquis and the framework law on integrated waste management • Implementing the Decisions of the Council of Ministers (DCM) that relate to the waste sector • Addressing the major waste management problems faced in the country in a coordinated and integrated	• Organise the collection of different waste streams, achieving high collection rates. • Ensure the availability of an integrated network of collection, sorting, recycling, recovery and disposal facilities. • Ensure that facilities operate to environmentally sound practices. Facilities should be permitted and meet basic requirements to ensure an environmentally sound management of wastes, as provided for by their permit. The compliance with permit conditions should be monitored and enforced.

Name of plan, programme or strategy/ environmental protection objective	How it affects, or is affected by the ISWM Investment Plan in terms of SEA issues[6]	Key requirements/ objectives arising from the PPS
	way The objectives to be achieved should also be supported by other planning documents, such as the ISWM Investment Plan.	• Ensure that waste holders deliver their wastes only to authorised facilities. • Collect and treat the data that are necessary for evidence based policy making and investments. • Raise awareness of stakeholders involved on the requirements of environmentally sound management and of the measures and infrastructure available to support the management. • Integrated SWM planning and management in waste zones. • Improving waste management through introduction of waste treatment methods according to EU standards.
Dumpsite Risk Mitigation/ Final Report, prepared from the Ministry of Tourism and Environment (MoTE), supported from the Decentralisation and Local Development Programme (DLDP), through Swiss Agency for Development (SDC), and with the technical support of the consultant UTS-01 Final Report was presented in 2018	The report presents a summary of the work of the MoTE working group on "Dumpsite Risk Mitigation". It includes an inventory of existing dumpsites and proposes measures for their rehabilitation, based on a first risk assessment. Measures for dumpsite rehabilitation have been included in the ISWM Investment Plan. The objectives to be achieved should also be supported by other planning documents, such as the ISWM Investment Plan.	Ranking of dumpsites to be • Rehabilitated (aiming to utilise it for a mid-term period, 3 – 5 years) • Closed/ encapsulated (according to measures specified in the report's Risk Mitigation Methodology) • Removed (the remains are to relocate to the nearest rehabilitated dumpsite or the nearest sanitary landfill)

Name of plan, programme or strategy/ environmental protection objective	How it affects, or is affected by the ISWM Investment Plan in terms of SEA issues[6]	Key requirements/ objectives arising from the PPS
Other Sectoral Planning		
Crosscutting Environmental Strategy 2015 – 2030 Draft document	Defines Albania as a country with a sustainable social and economic development, protecting natural resources from pollution and degradation, through their integrated management and promoting environmental values and putting them to the benefit of economic prosperity. The objectives to be achieved should also be supported by other planning documents, such as the ISWM Investment Plan. The objectives to be achieved should also be supported by other planning documents, such as the ISWM Investment Plan.	• Increasing the amount of waste going to landfills to 45 % • Recycling and composting of urban waste at around 55 % • Implementation the rehabilitation plans for nine priority hotspots and drafting plans for the remaining hotspots
National Strategy on Biodiversity	Albania is considered a country with high diversity of habitats and forest species. One of the main priorities of the Albanian Government over recent years has been the designation of new protected areas (PAs), which is also articulated in the National Strategy on Biodiversity. This has positively influenced biodiversity conservation and protection, even though PAs still face various problems and challenges. The objectives to be achieved should also be supported by other planning documents, such as the ISWM Investment Plan.	• SWM infrastructure must not be implemented in protected areas and their buffer zones. • An adequate ISWM should protect nature and biodiversity against negative influences.

Name of plan, programme or strategy/ environmental protection objective	How it affects, or is affected by the ISWM Investment Plan in terms of SEA issues[6]	Key requirements/ objectives arising from the PPS
Water Supply and Sewerage Master Plan for Albania; issued for Ministry of Public Works and Transportation, General Directorate of Water Supply and Sewerage, financed by KfW; January 2013	The Water Supply and Sewerage Master Plan is intended to • Expand and improve the quality of water supply and sewerage services • Orient the water utilities towards principles of cost control and full cost recovery • Improve governance and regulation in the sector • Invest in enhancing the capacities of the sector work force • Move towards convergence of Albanian law with EU Water Directives The objectives to be achieved should also be supported by other planning documents, such as the ISWM Investment Plan	• Adequate SWM should help to also protect Albanian water resources.
National Strategy for Sustainable Development of Tourism 2018 – 2022 Draft Document	The strategy shall promote the development of the tourism sector.	• Adequate development of SWM infrastructure for collection and final treatment/ disposal of municipal solid waste.

1.3 SEA Activities to Date

The MoIE[7] is leading the preparation of the ISWM Investment Plan. Since the Ministry is one of two line-ministries regarding waste management, the MoTE and the National Coordinator for Solid Waste Management from the Prime Minister's Office is also closely involved in the preparation process. Further stakeholders involved are the National Water Supply-Sewerage and Waste Infrastructure Agency (AKUM), also in authority for solid waste management) as well as the National Territorial Planning Agency (AKPT).

The involvement is done in particular by regular meetings, in which the main contents and suggestions of each phase of the ISWM Investment Plan are presented and discussed. In this way, commenting and approval of interim results is supported and necessary decisions are jointly prepared (see also Table 4). Other frequent participants of these

[7] Before the restructuring of the Government in autumn 2017, it was the Ministry of Urban Development (MUD).

meetings are GIZ, as they are working on the new national waste management strategy and action plan on behalf of the MoTE, and KfW Entwicklungsbank, as the donor, who is financing this project.

The process for the preparation of the Sector Study was initiated in March 2017. Since then, meetings, especially with the stakeholders mentioned above, have taken place at regular intervals. Due to the governmental restructuring, however, there was a break in the preparation of the Sector Study from August – October 2017. After resuming work on the Sector Study in November 2017, a two-day workshop took place in January 2018 during which the mentioned stakeholders had the opportunity to discuss and collate proposals for waste zones (catchment areas,), to identify ISWM measures in the waste zones and to discuss the prioritisation system and the criteria used. The regular meetings with the main stakeholders continued after the workshop in January till today.

In a further stage of the process for preparation of the Sector Study waste area meetings have been conducted in the respective municipalities, in order to get results and conclusions of the respective municipal and qark administration regarding their allocation to the specific waste zones as well as regarding the measures that are proposed in the Sector Study for the municipal level. In addition to the waste area meetings with representatives of the municipal and qark administration, a comparable meeting was held with NGOs.

In addition, the Draft Sector Study has been distributed for comment to all 61 municipalities as a file.

Furthermore, a donor meeting took place on 13 September 2018 in which the Sector Study was presented and discussed. The donors had the opportunity to present their comments to the Sector Study.

After all the comments were submitted, a workshop was held with the inter-ministerial working group to present and discuss the comments received to the Sector Study as well as the consideration of the comments in the Sector Study.

The SEA Study itself is prepared considering international and national standards, i.e. the European SEA Directive (Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment) as well as the Albanian Law N° 91/2013 on "Strategic Environmental Assessment". As a result, the Consultant has been commissioned to conduct the SEA Study based on the basic approach and general working steps presented in the following figure.

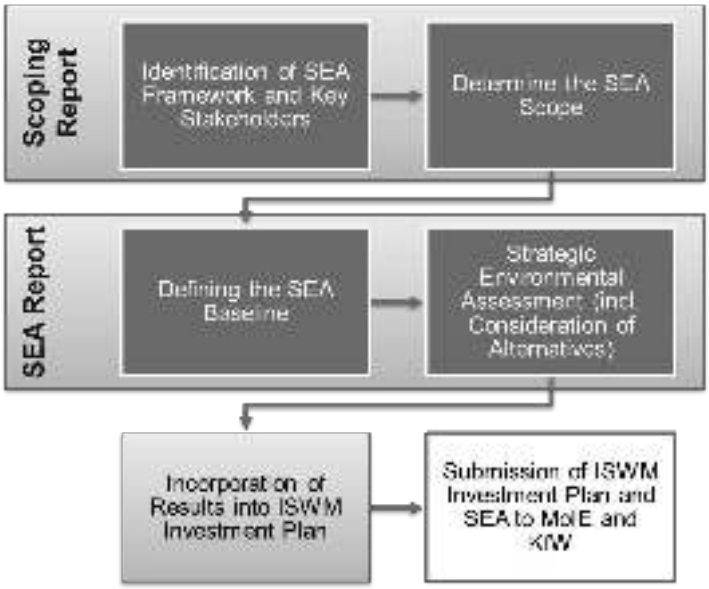


Figure 2 Basic approach and working steps for the SEA Study

The following table summarises the SEA activities to date in relation to the ISWM Investment Plan.

Table 4 SEA activities to date

SEA action/ activity	Date	Notes
Kick-off meeting with Inter-ministerial Working group	07 March 2017	The kick-off meeting took place at the Ministry of Urban Development (MUD) in Tiranë. The main issues presented and discussed during the meeting were: • Consultant and project team • Objectives of the project • Project approach • Time schedule • National waste management strategy
Workshop for presentation and discussion of the preliminary results of the Inception Phase	25 May 2017	The workshop focussed on the discussion of selected aspects of the Inception Phase, which forms an important basis for the elaboration of the further work packages. All of the issues discussed are presented in the Inception Report: • Population and waste data • Regulatory framework • Existing and planned regional waste treatment and disposal facilities • Municipal survey

SEA action/ activity	Date	Notes
Workshop for presentation and discussion of the preliminary results of the Technology Development Phase	26 July 2017	In the Technology Development Phase the focus was on the identification of technology options which are policy conform, proven and financially feasible. The issues discussed during the workshop are included in Technical Report: • Comments and questions to Inception Report • Feedback from discussion of methodology for calculation of waste amounts and waste forecast • Methodology for assessment of waste management technologies
Workshop for presentation and discussion of the preliminary results of the Site Identification and Investment Planning Phase	05 December 2017	In addition to a general presentation of the current project status and results, the methodology and approach, as well as results of the Site Identification and Investment Planning Phase were presented and discussed. Furthermore, an outlook on the further project steps and time lines was given: • General project overview • Presentation of technical options • Presentation and discussion of site identification • Presentation and discussion of methodology for investment planning • Outlook into future steps and timelines
Workshop for Investment Plan	10 & 11 January 2018	The workshop was to • Discuss and collate proposals for the waste zones (catchment areas) • Identify ISWM measures in the waste zones • Discuss the prioritisation system and the criteria used
Workshop for presentation and discussion of the Consolidated Investment Costs Report	07 March 2018	The workshop was to present and discuss • The consolidated investment measures in each waste zone • The overall investment costs for "regional" and "local" investments • The operation costs for "regional" and "local" activities, as well as related costs per household
Workshop for presentation and discussion of the results of the Prioritization Phase	24 April 2018	The workshop was to present and discuss • The results of the Prioritisation System

SEA action/ activity	Date	Notes
Workshop for presentation and discussion of the Final Results of the ISWM Investment Plan	06 June 2018	The workshop was to present and discuss • The results of the Prioritisation System • The final results of the Investment Plan
Waste Zone Meetings[8]	02 – 10 July 2018	The waste zone meetings were conducted to get results and conclusions regarding • Opinions of the respective municipalities regarding their allocation to the specific waste zones as well as regarding the measures that are proposed in the Sector Study for the municipal level • Input to the Scoping Study for the SEA
NGO Meeting[9]	11 July 2018	During the meeting the following main topics, related to the overall development of the ISWM Investment Plan and the SEA were presented: • Overview of the ISWM Sector Study • SEA and intended structure of the Environmental Report • Stakeholders to be included in further consultations
Distribution of Draft Sector Study to all 61 Albanian municipalities and other stakeholders by MoIE, incl. request for comments	End of July 2018	
Submission of Draft Scoping Report	07 August 2018	
Donor Meeting	11 September 2018	In the donor meeting the following main topics were presented and discussed: • Background and methodological approach of the Sector Study • Planning criteria • Proposed waste zones • Planning tools • Summary of results of the investment planning • Current activities and further actions
Scoping Meeting with MoIE	20 September 2018	The meeting was to discuss • The Draft Scoping Report • Next steps and timeframe for the SEA Study: o Results of the Scoping Phase o Workshop to discuss consideration of comments received on the Draft Investment

[8] The minutes of the waste zone meetings are attached in chapter 7.2 as Annex 2 as part of the Final Scoping Report.

[9] The minutes of the NGO meeting are attached in chapter 7.2 as Annex 2 as part of the Final Scoping Report.

SEA action/ activity	Date	Notes
		Plan o Consultation of the Draft SEA Study with the public and interest groups o Necessary adjustments of the timetable
Scoping Meeting with MoTE	20 September 2018	The meeting was to discuss • The Draft Scoping Report • Next steps and timeframe for the SEA Study: o Possibilities for process optimisation o Key stakeholders to be involved o Stakeholder involvement and consultation with the public and the interest groups
Submission of Final Scoping Report	24 September 2018	The Final Scoping Report is attached in chapter 7.2 as Annex 2.
Workshop for discussion of comments received to the Sector Study	26 October 2018	Based on the results/ feedback from the involvement of various stakeholders the workshop was intended to present and discuss • The comments received to the Sector Study • The consideration of the comments in the Sector Study

1.4 Scope of the SEA Study

1.4.1 Geographic Scope

The objective of the ISWM Investment Plan is the definition of a National Investment Plan in the waste management sector. As such the assessment will be focussed on a national strategic level and the depth of the assessment is reflecting this.

1.4.2 Temporal Scope

Short-, medium- and long-term impacts will be considered during the assessment. The National Investment Plan for the waste management sector is also divided into short-, medium- und long-term measures (see Table 2). As a result the time lines for the impact assessment will be identical to the timelines of the Investment Plan. That is to say, for the purpose of the SEA

- a short term horizon covering the years 2018 – 2022,
- a medium term horizon covering the years 2023 – 2027 and
- a long-term horizon covering the years 2028 – 2032

is considered.

1.4.3 Parts of the Sector Study to be Assessed

The purpose of the SEA Study is to provide a meaningful assessment of those parts of the Sector Study that may lead to significant environmental effects. In doing this it will ensure that the requirements of the SEA Directive and associated environmental regulations are being met in adopting the ISWM Investment Plan.

The following table shows those elements of the Sector Study that will be assessed as part of the SEA and also explains why they are/ are not assessed.

Table 5 Elements of the Sector Study Proposed for Assessment

Chapter	Decision and justification
Chapter 0: Executive Summary	**No**. This chapter summarizes the essential content and key points of the Sector Study and therefore does not require its own assessment.
Chapter 1: Introduction	**No**. This chapter provides an overview of the background to and the process of preparing the Sector Study.
Chapter 2: Existing SWM Situation	**No**. This chapter describes the current situation of waste management in Albania. The description of the Environmental Baseline can benefit of some baseline information provided in this chapter.
Chapter 3: Technology Options for SWM	**No**. This chapter explains and compares technology options for SWM.
Chapter 4: Waste Zones and Sites for Regional Investment Measures	**Yes**. The SEA will investigate the demarcation of waste zones and the locations for potential new Waste Management Centres.
Chapter 5: Investment Plan	**Yes**. The SEA will examine the investment plan regarding the new regional facilities and the potential risks associated.
Chapter 6: Prioritisation of Investment Measures	**No**. This chapter describes the methodology for prioritising the planned investments. Recommendations from the SEA may influence the prioritisation methodology.
Chapter 7: Next Steps	**No**. This chapter explains necessary steps to be taken for publishing the Sector Study as a binding plan for public authorities.

1.4.4 Key Environmental Aspects to be Addressed in the SEA Study

Potential significant environmental impacts from the ISWM Investment Plan, if unmitigated, and likely significant environmental effects, if unmitigated, are to be identified by the SEA and assessed. Such effects include, inter alia, positive and negative effects, short-, medium- and long-term permanent and temporary effects as well as cumulative effects.

Construction and operational effects are to be considered. Where appropriate, seasonality is to be considered in determining relevant effects.

Potentially significant environmental effects of implementing the ISWM Investment Plan are expected to include those listed in the table below.

Table 6 Environmental components and potential effects

Environmental Component	Potentially significant effect, if unmitigated
Population and human health	• Proximity of Waste Management Centres and other regional facilities to population centres • Improvements in the accessibility and the technical standard of regional waste management facilities contribute to better protection of the environment and human health • Possible effects on tourism and recreational land uses • Effects on air quality • Effects on soil • Effects on water quality (ground and surface waters) • Effects on traffic and transport networks • Potential for nuisance (noise, odour etc.)
Biodiversity and flora and fauna	• Effects on protected areas • Effects on flora and fauna and (sensitive) habitats
Soil and land use	• Land requirements for regional waste management centres and further regional facilities • Influence on land use practices • Effects on soil quality due to reduction of leachate • Effects on soil quality from use of fertiliser produced in composting plants in regional waste management centres • Impacts on soil of any incidents on site at regional waste management centres and further regional facilities
Material assets	• Use of resources (building material and energy) for regional waste management centres and further regional facilities • Reuse of material by recycling of respective waste fractions • Use of transport networks • Use of resources in operation of regional waste management centres and further regional facilities
Water	• Impacts on surface and groundwater quality (e.g. from reduction of leachate or waste in surface waters) • Impacts on ecological status of water bodies • Impacts on surface and groundwater of any incidents on site at regional waste management centres and further regional facilities
Air quality and climatic factors	• Effect of odour generated in regional waste management centres • Effect of air emissions from transport of waste • Effect of air emission from regional waste management facilities • Greenhouse gas emissions from transport of waste • Reduction of greenhouse gas emissions through disposal of waste in regional waste management centres and reduction of the number of uncontrolled and unsanitary dumpsites

Environmental Component	Potentially significant effect, if unmitigated
Landscape	• Effects on general landscape character and sensitive receptors
Architectural, archaeological and cultural heritage	• Effects on cultural, architectural and archaeological heritage features in the proximity of proposed regional waste management centres and other regional facilities • Potential of disturbance of previously undiscovered near or within development areas of regional waste management centres and other regional facilities

1.4.5 Data Sources and Extent of Assessment

Key documents referenced are the

- State of the Environment Report and
- Environmental Performance Review

Geographical Information Systems (GIS) is utilised where possible to display and analyse relevant information. The following table provides an overview of each of the SEA topics outlined in the SEA baseline. The table also includes a list of the data sources used to compile the baseline and in addition it outlines the extent of the assessment based on these available data sources.

Table 7 Baseline data sources and extent of assessment

SEA Topic	Potential Data Source	Potential Extent of Assessment based on Data Sources
Biodiversity, flora and fauna	• GIS data on nature protection zones (ASIG and NAWSS) • General National Spatial Plan 2015 – 2030 (AKPT) • National Strategy on Biodiversity • Biodiversity National Network of Albania (AKZM): species fact sheets, species data, and webGIS, protected areas	National and regional datasets are available for aspects relating to biodiversity, flora and fauna.
Population and human health	• INSTAT Albanian Institute of Statistics • General National Spatial Plan 2015 – 2030 (AKPT) • GIS data on residential areas, touristic areas, vegetation – agricultural areas (MoTE, ASIG, NAWSS)	National data and information are available for population density and distribution and the potential impacts of the ISWM Investment Plan can be assessed relative to the available information. Topic of human health will be referenced in relation to indirect impacts from air quality, noise, water quality etc.

SEA Topic	Potential Data Source	Potential Extent of Assessment based on Data Sources
Soils and land use	• GIS data on residential areas, transport infrastructure, agriculture, existing technical infrastructure, geological and hydro-geological conditions, touristic areas (MoTE, ASIG, NAWSS) • General National Spatial Plan 2015 – 2030 (AKPT) • Albania land cover country fact sheet	National data and information are available for soil and land use at a regional/ national scale. This is sufficient for the strategic nature and the geographic scope of the ISWM Investment Plan.
Water	• GIS data on waterways and waterbodies (NAWSS) • Information on flooding areas (not nationwide) • General National Spatial Plan 2015 – 2030 (AKPT) • Albanian Water Supply and Sanitation Sector Strategy • Water Supply and Sewerage Master Plan for Albania • Albania 2017 bathing water report • River Basin Management on Drin – Buna, Seman, Shkumbin (draft documents) • Draft National Strategy on Integrated Management of Water Resources 2017 – 2027	National data and information is available to a limited extend (e.g. information on flooding areas is not available nationwide). As far as possible, issues relating to waste and water quality will be identified.
Air quality and climatic factors	• Air pollution – State and impacts (Albania) • Third National Communication of the Republic of Albania on Climate Change • PRTR Registry at the NEA • Monitoring results produced by campaigns of NEA and the Albanian Institute of Public Health	National data and information are available at a county / national scale. This is sufficient for the strategic nature and the geographic scope of the ISWM Investment Plan.

SEA Topic	Potential Data Source	Potential Extent of Assessment based on Data Sources
Material assets	• Albania – material resource recovery • Albania – municipal waste management • Draft National SWM Strategy and Action Plan • International Energy Agency - Statistics for Albania • General National Spatial Plan 2015 – 2030 (AKPT)	National information is available for certain resources that may be affected by the ISWM Investment Plan.
Architectural, archaeological and cultural heritage and landscape	• GIS data on cultural heritage sites (MoTE, ASIG) • Albania – UNESCO World Heritage Centre • There is no information for landscape publicly available on national level	National data and information are available for cultural heritage, however the scale of the data and information are directed towards local project specific sources. Anyhow, the available information is sufficient for the strategic nature and the geographic scope of the ISWM Investment Plan.

2 Environmental Objectives, Targets and Indicators

2.1 Environmental Objectives in Albania

A key purpose of scoping is to set out sufficient details about the proposed methodological framework for the assessment of environmental effects to allow forming a view on this matter. It is proposed to use an objectives-led assessment which will allow an assessment against defined SEA Environmental Objectives for each of the identified issue areas.

The preceding sections have identified the environmental characteristics and key environmental issues relating to the ISWM Investment Plan. This section uses that information to set out a series of draft SEA objectives, indicators and associated targets. These will be used in the SEA study to predict the likely environmental effects of the ISWM Investment Plan. The use of these objectives will ensure that, following the scoping study, the SEA study will only focus on those issues that are most relevant and significant.

Set out in the following table are the draft SEA objectives that are being considered to test the potential environmental impacts of the ISWM Investment Plan. The assessment criteria are examples of the issues that will be considered. It should be noted that these are draft objectives only and are provided for the purpose of discussion at this scoping stage. Feedback on the draft objectives with a view to updating them prior to the SEA study is appreciated.

Table 8 SEA environmental objectives

SEA topic	Environmental objectives	SEA targets
Population and human health	• Protection and improvement of human health	• Improvement of quality of life • Protection of human health
Biodiversity, flora and fauna	• Protection of biodiversity • Protection of flora and fauna and their natural habitats	• Protection of natural and biological resources • Protection of protected areas and their natural resources
Soils and land use	• Preservation of healthy and ecological functions of soil • Prevention of soil damage incl. protection of soil structure (erosion, soil compaction) • Remediation and restoration of damaged soil	• Preservation of healthy and ecological functions of soil
Material assets	• Prudent and rational use of nature and its resources	• Reduction of the use of resources and improving the efficiency of such use • Responsible utilisation of natural resources
Water	• Good ecological status of surface water as well as groundwater • Good chemical status of surface water as well as ground water	• Protection of surface water as well as groundwater and improvement of its ecological status • Protection of surface water as well as ground water and improvement of its chemical status
Air quality and climatic factors	• Protection and preservation of air quality • Prevention and reduction of pollution causing ozone layer damage and climate change	• Reduction and stabilization of greenhouse gas emissions • Protection and improvement of air quality
Architectural, archaeological and cultural Heritage	• Preservation of cultural heritage	• Conservation and protection of the assets of cultural heritage
Landscape	• Preservation and restoration of cultural and aesthetic landscape values	• Preservation of landscape diversity

The targets will be considered in preparation of the environmental baseline and during the environmental assessment, in order to meet the SEA environmental objectives of the ISWM Investment Plan.

Based on the environmental baseline prepared, indicators will be defined bearing in mind the availability of data and the feasibility of making direct links between any changes in

the environment and the implementation of the ISWM Investment Plan. That is to say, the indicators will be developed during the SEA study, including in response to comments received on this Scoping Report.

2.2 Consideration of Environmental Objectives in the Planning Process

Within the framework of the SEA for the ISWM Master Plan, the likely significant environmental impacts of the envisaged measures on the subjects of protection throughout the study area are determined and assessed. This assessment makes it possible to identify at an early stage which types of measures are potentially harmful to the environment.

A decision on whether and how individual measures of the ISWM Investment Plan will be implemented will be taken later, either on national/ regional or local level. The significance of the expected environmental impacts of the respective measures will be finally assessed within the framework of the implementation planning and approval procedures. First suggestions relevant for subsequent planning and approval procedures are summarized in the following:

- For the subjects of protection *water* and *soil*, the SEA study assesses strategic environmental objectives for the entire study area of the Investment Plan. When implementing individual measures, regional and local water and soil conditions must also be taken into account. Among other things, the criteria water quantity and water balance should be included in the subordinate planning and approval procedures.
- For the subjects of protection *air quality and climate*, the implementation of individual measures of the Investment Plan should also take into account the regional and local climatic and air conditions in the subordinate planning and approval procedures.
- The protection goals of the subjects of protection *architectural, archaeological and cultural heritage* as well as *landscape* include, among other things, the preservation of architectural and natural monuments as well as protected landscapes. When implementing individual measures of the investment plan, the potential impact on these subjects of protection should therefore be taken into account in the planning and approval procedures.
- The subject of protection *material assets* includes goods of economic importance to the general public. These include, inter alia, mineral deposits such chrome, nickel ore, copper, coal, gypsum, limestone, peat, basalt, sandstone and clay. The implementation of individual measures in the Investment Plan therefore has to take

account of potential impacts on the mining areas. It should also include the economic impact on downstream production processes.

3 Environmental Baseline and Key Problems, including the Likely Evolution of the Environment without the ISWM Investment Plan

A description of the main characteristics and current state of the environment as well as the current significant environmental problems with regard to SWM are described in the following subchapters.

The likely evolution of the environment without the ISWM Investment Plan represents the reference scenario for the expected environmental impacts with implementation of the ISWM Investment Plan.

The ISWM Investment Plan is guided by the National SWM Sector objectives, namely on

- the provision of reliable SWM services to the whole country,
- the reduction and recycling of waste fractions,
- the reduction of the number of uncontrolled and unsanitary dumpsites as well as
- the protection of the environment.

The ISWM Investment Plan is focussing on Municipal Solid Waste and furthermore includes required investments for inert waste management. Other waste streams according to the Draft WM Strategy will be dealt with in separate masterplans.

3.1 Description of the Geographic Area as well as Population and Waste Forecast

As a National Investment Plan it is covering the entire country of Albania.

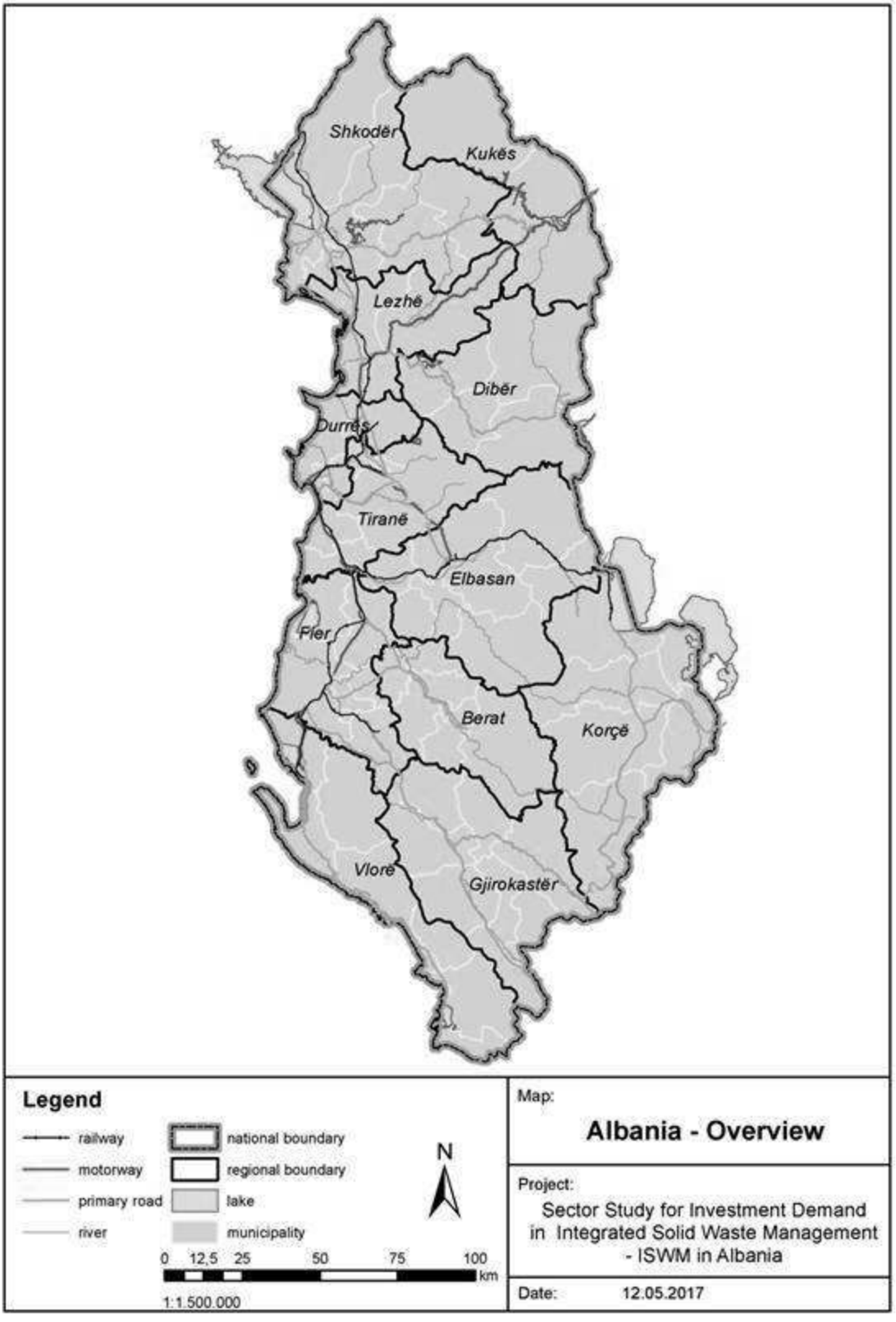


Figure 3 Overview of Albania, incl. administrative regions (qarks)

3.1.1 Geographic Framework Conditions

Albania is a small country in South-eastern Europe, on the Mediterranean Sea and has a total area of 28,748 km². The county shares borders with Montenegro in the northwest, Kosovo in the northeast, Macedonia in the east and Greece in the south. Its coastline length on the Adriatic and the Ionian Seas is 476 km. Altogether, 70 % of the country is mountainous and often inaccessible from the outside.

3.1.2 Population and Waste

3.1.2.1 Population Forecast

The table below reports the population forecast by qarks, showing the assumed population for 2018 as well as for the last years of the Phases 1 – 3.[10]

Table 9 Population forecast by qarks

Qark	Population Forecast			
	2018	2022	2027	2032
Berat	159,629	151,851	143,087	135,283
Dibër	139,090	131,304	122,467	114,525
Durrës	334,298	348,156	366,324	385,480
Elbasan	329,358	321,261	311,871	303,252
Fier	360,686	354,527	347,408	340,909
Gjirokastër	90,379	85,687	80,846	77,101
Korçë	253,456	245,634	236,438	227,849
Kukës	87,290	83,206	78,524	74,272
Lezhë	155,560	152,568	149,150	146,072
Shkodër	245,350	239,796	233,491	227,859
Tiranë	944,494	1,007,636	1,092,782	1,185,418
Vlorë	247,774	250,328	254,065	258,418
ALBANIA	**3,347,364**	**3,371,954**	**3,416,451**	**3,476,438**

[10] Albania has several official sources that provide population data. The most commonly used are INSTAT (based on the Census) and the Civil Registry; however, their numbers differ considerably. The population data from the Civil Registry are generally much higher than the figures according to INSTAT. Therefore, the following correction factor developed by the Albanian Ministry of Finance has been applied to calculate population figures based on both INSTAT and Civil Registry: Census + (Civil Registry – Census) * 30 %.

3.1.2.2 Waste Generation and Collection Forecast

Based on the population forecast and the assumed specific generated waste quantities in different settlement types[11] as shown in the following table, the waste generation to be expected over the project period has been calculated.

Table 10 Specific waste generation quantities per settlement type

Settlement types	Waste Generation [kg/cap/d]
National capital (Tiranë)	1.2
Capitals of national importance (centre of qark, > 35,000 inhabitants)	1.1
Regional centre of agglomeration (centre of agglomeration, > 20.000 inhabitants)	1.0
Local centre (district centre, no agglomeration, < 20,000 inhabitants)	0.7
Metropolitan suburban (inside Tiranë-Durrës metroplitan area)	
Non-urban tourism oriented local units	
Suburban (outside Tiranë-Durrës metropolitan area)	0.55
Non-urban mining or energy local units	
Mixed industrial and service local units	
Mixed agricultural plains	0.4
Mixed agricultural mountains	
Agricultural in plains	
Agricultural in mountains	

In the following table, the waste generation forecast is summarised at the qark level with reference to the same years as the population forecast.

[11] The settlement types are based on the Communes and Municipalities Typology as published by INSTAT. See INSTAT: Albania Communes and Municipalities Typology; May 2014.

Table 11 Waste generation forecast by regions

Region	Waste Generation Forecast [Mg/a]			
	2018	2022	2027	2032
Berat	39,503	37,616	35,491	33,601
Dibër	26,585	25,097	23,408	21,891
Durrës	105,626	110,081	115,924	122,088
Elbasan	76,175	74,350	72,239	70,309
Fier	84,624	83,197	81,549	80,046
Gjirokastër	21,376	20,263	19,102	18,184
Korçë	62,575	60,733	58,571	56,558
Kukës	18,178	17,322	16,340	15,449
Lezhë	35,864	35,182	34,403	33,704
Shkodër	62,307	60,910	59,325	57,911
Tiranë	334,049	356,517	386,815	419,778
Vlorë	73,512	74,551	76,005	77,641
ALBANIA	**940,376**	**955,819**	**979,173**	**1,007,159**

In Albania the waste amounts collected differ from the amounts that are generated, because waste collection services do not cover all areas, especially in agricultural areas. Therefore, for the waste collection forecast, waste collection rates are assumed as detailed in the following table.

Table 12 Waste collection rates per settlement type

Settlement types	Waste Collection [%]
National capital (Tiranë)	85
Capitals of national importance (centre of qark, > 35,000 inhabitants)	80
Regional centre of agglomeration (centre of agglomeration, > 20.000 inhabitants)	
Local centre (district centre, no agglomeration, < 20,000 inhabitants)	
Metropolitan suburban (inside Tiranë-Durrës metroplitan area)	
Non-urban tourism oriented local units	
Suburban (outside Tiranë-Durrës metropolitan area)	60
Non-urban mining or energy local units	
Mixed industrial and service local units	
Mixed agricultural plains	33
Mixed agricultural mountains	
Agricultural in plains	
Agricultural in mountains	

In addition, collection coverage is expected to increase by 3 % in agricultural areas and by 1 % in all other areas each year.

Based on the assumptions described above, the following table shows the waste collection forecast at the level of the qark, referring to the same years as the population and waste generation forecasts. The detailed forecast can also be found in Annex 1.

Table 13 Waste collection forecast by regions

Region	Waste Collection Forecast			
	2018	2022	2027	2032
	[t/a]	[t/a]	[t/a]	[t/a]
Berat	26,516	28,010	29,679	30,874
Dibër	15,212	16,627	18,151	19,263
Durrës	84,703	92,839	103,772	115,614
Elbasan	49,120	53,542	58,817	63,430
Fier	54,557	59,809	66,187	71,992
Gjirokastër	14,674	15,398	16,269	16,934
Korçë	42,391	45,418	48,941	51,828
Kukës	11,114	11,968	12,915	13,678
Lezhë	24,016	26,495	29,500	31,768
Shkodër	42,490	45,847	49,899	53,348
Tiranë	278,345	312,167	359,150	411,808
Vlorë	54,544	59,603	66,147	72,659
ALBANIA	**697,681**	**767,723**	**859,428**	**953,196**

In summary, both the amount of waste generated and the amount of waste collected are forecasted to increase over the entire planning period. The driving forces for the increased generated waste amounts are exclusively the regions in which the country's major urban centres are located, namely Tiranë, Durrës and Vlorë. The forecasted increase in the collected waste amounts, on the other hand, is due to an assumed general improvement in waste collection. The following table compares the forecasted national development of the waste generation and the waste collection and shows the expected development of the waste collection rate in percent.

Table 14 Summary of waste generation and waste collection forecast

	Waste Forecast			
	2018	2022	2027	2032
	[t/a]	[t/a]	[t/a]	[t/a]
Waste generation forecast	940,376	955,819	979,173	1,007,159
Waste collection forecast	697,681	767,723	859,428	953,196
Waste collection rate	74%	80%	88%	95%

3.1.2.3 Waste Composition

For waste composition the composition has been assumed, as shown in the following graphic. It is based on official Albanian information.[12]

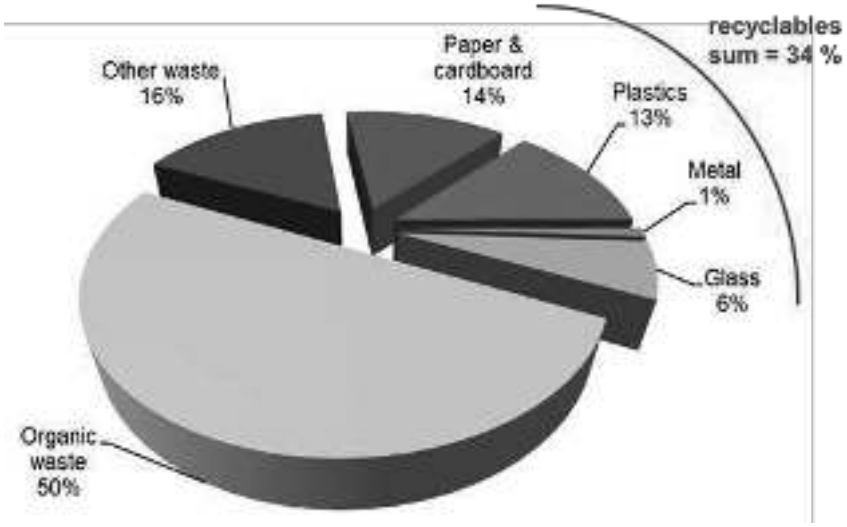


Figure 4 Average composition of household and household like waste in Albania (weight-%)

3.1.2.4 Construction and Demolition Waste/ Inert Waste

For construction and demolition/ inert waste a status quo assessment and forecast has also been prepared. It was assumed that the data provided in the official statistics (200,000 Mg for 2016, based on data reported by the Albanian municipalities) are too low. Instead, the amount of generated CDW is estimated at 1.9 million tons per year.

3.2 Population and Human Health

3.2.1 Environmental Baseline and Key Problems

Albania currently has about 3.5 million inhabitants. Slightly more than 50 % of Albania's population is urban.

The population is concentrated mainly on the coastal plain and in some main valleys. Increasingly, the cities expanded more and more into the countryside. Especially in central Albania a strong urban sprawl is noted. This is most evident in the corridor of Tiranë-

[12] See Commission of European Communities, for and on behalf of the Government of Albania: Albanian National Waste Strategy, Component D – Environmental Management Plans, Activity – National Waste Management Plan, Draft Version; Ref.: EuropeAid/124909/C/SER/AL; April 2010; p. 45.

Durrës, where the two largest cities of the country grow together into a single metropolitan area and where at least one third of the Albanian population is living. Other important settlement centres are Elbasan, Vlorë, Shkodër, Korçë, Fier, Berat, Lushnje, Kavaje and Pogradec.

The mountain areas and the downs are less dense or sparsely populated. Many of these rather peripheral areas are affected by heavy migration.

Albania is considered one of the most polluted countries in Europe. Emissions and abandoned polluted areas pollute water bodies, groundwater, soil and air, especially in densely populated areas.

One of the reasons for this is a largely inadequate solid waste management, including wild dumping and widespread uncontrolled burning of waste. Waste is often disposed on riverbanks or in the open field. At present there are only a few landfills that meet the standard of a sanitary landfill; and not all these landfills ensure proper operation.

Sanitary landfills in Albania are:

- Tiranë (Shara Landfill)
- Shkodër (Bushat Landfill)
- Saranda (Bajkaj Landfill)
- Korçë (Maliq Landfill)
- Vlorë (in preparation/ implementation)

Furthermore, a waste incineration plant is in operation and two more are under construction/ planned:[13]

- Elbasan (in operation)
- Tiranë - Durrës
- Fier

Figure 13 shows these existing SWM facilities.

Although Albania has made great progress in waste management in recent years, the environmental and health impacts of the present SWM system are still significant:

In spite of improvements regarding the waste collection coverage in recent years, collection services still do not cover all settlement areas, especially in rural areas.

[13] The environmental impacts of these plants are unclear.

Whereas city centres generally present themselves fairly clean, alongside roads and in the outskirts scattered waste, as well as piles of waste and especially building rubble, can be seen frequently. Reasons for the unsatisfactory situation, especially outside the main centres, are manifold, including poor condition and insufficient number of waste collection equipment (vehicles and containers). As a countrywide average the current waste collection rate is estimated at 74 %.

Figure 5 Uncontrolled dumped waste spreading at roadside (left), damaged waste container and spread burning waste (right)

In general it can be stated that improper disposal of waste is the most serious environmental problem of the current SWM. The main problems concern wrongly selected locations (e.g. in riverbeds, inside settlements), absence of measures to limit emissions (e.g. no coverage, burning), dumping into rivers and important water resources, poor operation of dumpsites where they exist (no budget, no equipment). Even where municipalities expend considerable effort on city cleaning, the situation at the dumpsites is mostly neglected.

Figure 6 Examples of dumpsites of two major Albanian cities: Berat city dumpsite located at Osum river (left), Vlora city dumpsite with leachate and free roaming pigs

Besides shortage of funds, a general lack of awareness among the population and decision makers seems to be an important reason for this neglect. Even, at some of the landfills being constructed according to sanitary landfill standards, operation is incompliant with standards of the EU landfill directive thus losing the benefits gained from the investment.

Furthermore, pollution from dumpsites remains a major environmental risk in the country, even after closure. Though remediation can substantially reduce environmental pollution, and various feasibility studies already have been prepared, actual implementation of the proposed measures in most cases is pending. The final report on Dumpsite Risk Mitigation, prepared under the MoTE presents a summary of the working group on "Dumpsite Risk Mitigation". It includes an inventory of existing dumpsites and proposes measures for their rehabilitation.

In principle, the following shortfalls of the present SWM system can be identified with regard to population and human health.

Table 15 Environmental shortfalls of the present SWM system with regard to population and human health

SWM activity	Environmental shortfalls
Poor waste collection rates	• Scattering of waste and indiscriminate dumping especially in areas so far not served by the waste collection system negatively affect the hygienic situation in the respective areas • Use of contaminated surface or groundwater as drinking or irrigation water supports entrance of contaminants into the human and/ or animal food chain
Poor recycling rates and lack of separate collection (incl. organic waste fractions)	• Ongoing informal waste separation activities (both from the collection containers in the settlement areas and on the dumpsites/ landfills) takes place under bad working conditions that expose informal workers to health risks

SWM activity	Environmental shortfalls
Disposal on poorly managed or uncontrolled dumpsites	• Scattered waste and wild dumps/ poorly operated landfills attract vermin, which can transfer human and animal diseases • Dust and odour emissions impact on nearby sensitive receptors • Light components of disposed/ dumped waste carried away by the wind pollute surrounding areas • Leachate emissions from landfills pollute soil, surface water and groundwater (with POP and other organic components, heavy metals and their salts) • Landfill fires (and indiscriminate burning of waste) cause air pollution resulting from incomplete combustion (formation of particulate matters as well as toxic substances) • Scattered waste as well as poorly designed and managed dumpsites and landfills allow access by domestic animals feeding waste materials (including paper and plastics), supporting the entrance of contaminants in the human food chain

3.2.2 Likely Evolution of the Environment without the ISWM Investment Plan

As there is no comprehensive, nationwide modern waste collection, treatment and disposal in Albania, the consequences for the city sanitation, public health and the environment are serious. Sustainable waste management is, however, not only important for these three aspects, but also for the reduction of greenhouse gases and thus for climate protection. Through prevention, recovery and optimised disposal of waste resources and energy are saved and greenhouse gas emissions are reduced.

Albania is seeking membership in the EU and thus is in the process of adopting EU standards as national standards. Thus, for the Albanian Government an environmentally friendly, economically viable and hygienically safe collection and disposal of municipal waste has a high priority. To accelerate the process, Albania seeks support from international donors.

It can therefore be assumed that also without the ISWM Investment Plan, SWM in Albania would continue to develop and modernise. However, through the development of the ISWM Investment Plan a close coordination of long-term investment and financing planning between the Albanian Government, local government units and the donors shall be established, allowing for monitoring of long-term investment and financing.

The overall goal of the ISWM Investment Plan is to contribute to the protection of the environment, responsible utilisation of natural resources and human health as well as to the economic development of Albania. More specifically, the Investment Plan aims at

eliminating spontaneous investments, which are not based on studies, or approved by policy makers, in order to prevent

- Making public funds inefficient and
- Creating hotspots that will require more funds and resources to return to normal acceptable conditions

The ISWM Investment Plan aims to provide SWM services to the whole country, reduce and recycle the respective waste fractions, reduce the number of uncontrolled and unsanitary dump sites and to protect the environment under consideration of the overall costs, in order to avoid discrepancy between objectives and related costs with central government and local governments. In other words, the ISWM Investment Plan aims to ensure that a realistic, nationwide ISWM system is developed and updated on a regular basis. Without this plan, there is a risk that investments will not be coordinated nationwide or/ and based on sustainable funding. As a consequence, there would be a risk that the risks described above would continue for the population and human health or could not be excluded in the long-term.

3.3 Biodiversity, Flora and Fauna

3.3.1 Environmental Baseline and Key Problems

Although a small country, Albania is distinguished for its rich biological diversity. The variation of geomorphology, climate and terrain create favourable conditions for a number of endemic and sub-endemic species.

Over a third of the territory of Albania, about 10,000 km², is forested and the country is very rich in flora. About 3,000 different species of plants grow in Albania. Coastal regions and lowlands have typical Mediterranean macchia vegetation, whereas oak forests and vegetation are found on higher elevations. Vast forests of black pine, beech and fir are found on higher mountains and alpine grasslands grow at elevations above 1,800 m.

The Albanian forests are home to a wide range of mammals. There are some 91 globally threatened species found within Albania, including the Dalmatian pelican, pygmy cormorant, and the European sea sturgeon. Rocky coastal regions in the south provide good habitats for the endangered Mediterranean monk seal. One of the most significant bird species found in the country is the golden eagle, known as the national symbol of Albania. The Albanian forests still maintain significant communities of large mammals such as the brown bear, grey wolf, chamois and wild boar. The north and eastern

mountains of the country are home to the last remaining Balkan lynx, a critically endangered population of the Eurasian lynx.

According to information of the Albanian National Agency of Protected Areas (AKZM), the Government of Albania has established a system of Protected Areas.[14] This system consists of Strict Nature Reserves (IUCN Category Ia), National Parks (IUCN Category II), Natural Monuments (IUCN Category III), Natural Parks and Habitat or Species Management Areas (IUCN Category IV), Protected Landscapes (IUCN Category V), Protected Areas with Sustainable Use of Natural Resources (IUCN Category VI), as well as Regional Protected Areas.[15] According to the Albanian Development Strategy of Protected Areas, the total area of protected areas was envisaged to be 18 percent of the Albanian Territory by the end of 2016.

However, lack of financial means and limited number of staff make it difficult to implement plans and objectives.[16]

The most important protected areas in Albania are shown in the following figure. The protected areas are as follows:

- I: Strict Nature Reserves and Wilderness Areas
- II: National Parks
- III: Natural Monuments
- IV: Habitat/ Species Management Area
- V: Protected Landscape
- VI: Protected area with sustainable use of resources.

[14] For further information see Albanian National Agency of Protected Areas: Protected Areas; http://www.akzm.gov.al/index.php?option=com_k2&view=itemlist&layout=category&task=category&id=30&Itemid=433&lang=us, as of 19 June 2017.

[15] For more details regarding categories of protected areas according to IUCN q.v. https://www.iucn.org/theme/protected-areas/about/protected-areas-categories

[16] Qv. Albanian National Agency of Protected Areas (AKZM): Development Strategy of PA; http://www.akzm.gov.al/index.php?option=com_k2&view=item&id=125:strategjia-e-zhvillimit-e-zm&Itemid=426&lang=us, as of 19 June 2017.

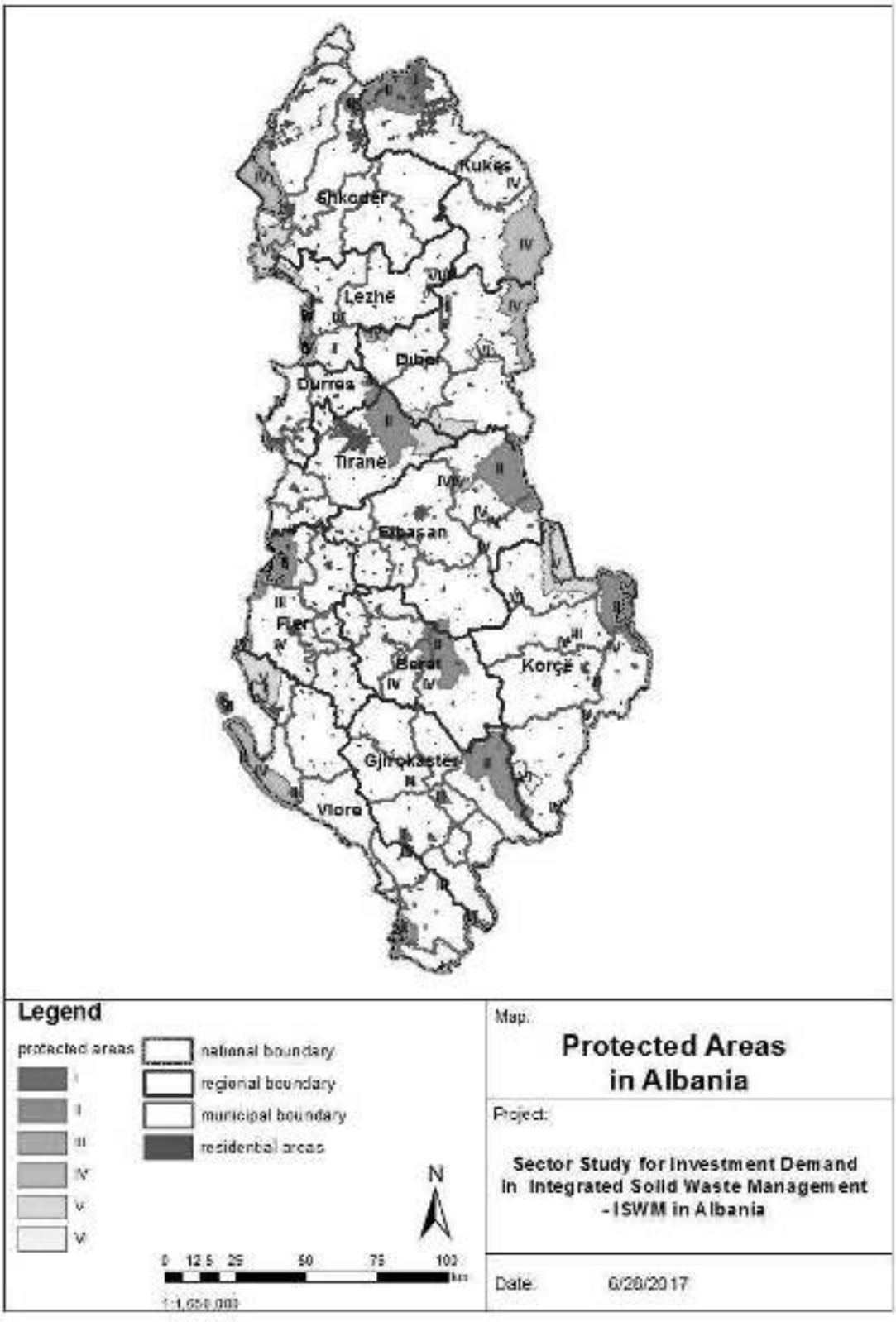


Figure 7 Map of most important protected areas in Albania

The designation of new PAs has influenced biodiversity conservation and protection within and around these areas which in general seems to be well protected. In spite of the positive influence of the new PAs on biodiversity, at present they still face various problems and challenges:

- habitat degradation from coastal erosion;
- illegal logging;
- illegal fishing, poultry and wild animals hunting;
- inefficient management of recreation activities.

These are critical issues where additional efforts should be addressed.

In order to protect the PAs and the Albanian flora and fauna, no SWM infrastructure may be constructed in PAs and their buffer zones. Furthermore, an adequate organisation of the municipal SWM should help protect nature against negative influences.

Environmental shortfalls of the present SWM system with regard to biodiversity, flora and fauna are summarised in the following table.

Table 16 Environmental shortfalls of the present SWM system with regard to biodiversity, flora and fauna

SWM activity	Environmental shortfalls
Poor waste collection rates	• Scattering of waste and indiscriminate dumping pollute the environment/ landscape and thus can impact on ecologically valuable or protected areas • Contaminated surface or groundwater can be harmful for protected areas or species
Disposal on poorly managed or uncontrolled dumpsites	• Further conflicts may arise due to poor site selection, e.g. for waste disposal facilities

3.3.2 Likely Evolution of the Environment without the ISWM Investment Plan

With regard to waste management, the future development of biodiversity and flora and fauna will be influenced in particular by the implementation of ongoing measures and projects. As a result, improvements are likely to be expected, also with regard to the protection/ improvement of the state of the PAs.

If the ISWM Investment Plan is not implemented, it is to be feared that existing adverse impacts cannot be controlled nationwide, but in some regions damage to the flora and fauna due to pollutant emissions can still occur.

3.4 Soils and Land Use as well as Material Assets

3.4.1 Environmental Baseline and Key Problems

About half of the Albanian territory is covered by mountains with heights over 600 m, but only a small part is high mountain area. From the Lake Skadar in the north to Vlorë in the south, alluvial soils of only a few kilometres width stretch along the coast; in Central Albania, they extend to the great Myzeqe plain. Furthermore, on the coast there are numerous lagoons and wetlands.

Only the valleys, the downs, parts of the coastal plain and some plateaus allow a dense human settlement. There, the population density is more or less high, while other parts of the country are sparsely populated.

Residential development has decreased in the last 10 years compared to decade before. Instead, urban sprawl was now driven mostly by construction of highways in the northern part of the country and also by extension of industrial and commercial units in the surroundings of the capital city of Tiranë and also around the Durrës city.[17]

Infrastructure in the rural areas is rather weak. Although the main routes are rehabilitated and improved, in rural areas a large part of the transportation routes are still very poor. The water and electricity supply as well as waste management and sanitation are often insufficient in rural areas.

In Albania soil erosion[18] remains a permanent threat to land stability and is a persistent environmental problem for agriculture.[19]

Agriculture is one of the most important economic sectors of Albania. More than ¼ of the total area of Albania is used for agricultural purposes.[20] Livestock farming dominates.[21]

The productivity of agriculture is low. Although well of ½ of the Albanian workforce works in agriculture, it generates only 1/5 of the GDP, as the majority of agriculture is operated as a subsistence economy.

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[17] See European Environment Agency: Land cover 2012; Albania, September 2017.

[18] Some of the factors that influence erosion are climate conditions, such as rainfall (amount, intensity and frequency), temperature, physical characteristics of soil, the conditions of the relief (slope) and land use, vegetation cover and degradation (deforestation, fires, overgrazing, etc.), topography modifications (construction of roads, urban centres, etc.), and water management policy (sewers, hydro works, dikes, etc.).

[19] See Albanian Ministry of the Environment: The Third National Communication of the Republic of Albania under the United Nations Framework Convention on Climate Change; Tiranë, June 2016.

[20] See European Environment Agency: Land cover 2012; Albania, September 2017.

[21] Also, about half of the products from cultivations are used as animal feed.

Albania has many raw materials: Chromium is on of Albania's most important raw materials. In addition, there are large deposits of nickel, copper, coal, gypsum, limestone, peat, basalt, sandstone and clay. For various reasons, many raw materials are currently rarely mined. In addition, Albania has barely exploited gas and oil reserves.

The following graphic shows the land use in Albania, based on the information given in the last land cover report.

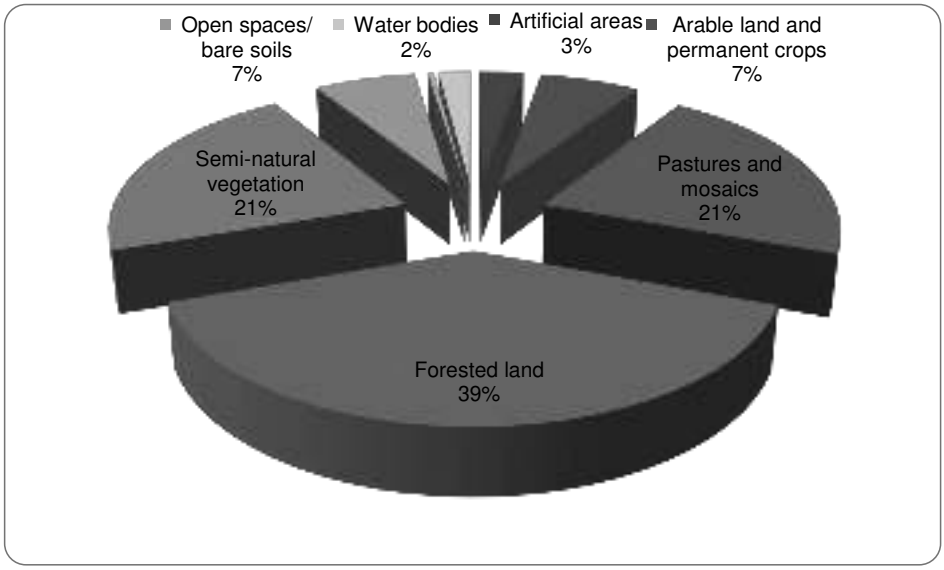


Figure 8 Albanian land cover 2012 [% of total]

For soil and land use, the following environmental shortfalls can be summarised in terms of the existing waste management.

Table 17 Environmental shortfalls of the present SWM system with regard to soils and land use

SWM activity	Environmental shortfalls
Poor waste collection rates	• Scattering of waste and indiscriminate dumping pollute the soil as well as the surface water and groundwater • Use of contaminated surface water or groundwater as irrigation water supports the entrance of contaminants in the human and/ or animal food chain
Poor recycling rates and lack of separate collection (incl. organic waste fractions)	• Low recycling rates lead to an overall/ global exploitation of natural resources

SWM activity	Environmental shortfalls
Disposal on poorly managed or uncontrolled dumpsites	• Leachate emissions from landfills and dumpsites pollute the soil • Light components of disposed waste carried away by the wind pollute surrounding areas and can have a negative impact on certain land uses (housing, agriculture) • Domestic animals may access dumpsites and uncontrolled/ not properly managed landfills and feed from waste materials • Poorly selected sites for disposal facilities may generate conflicts with other land uses, such as housing, agriculture or mining

3.4.2 Likely Evolution of the Environment without the ISWM Investment Plan

In view of the risks posed by the current SWM, the likely evolution of the soil and land use is characterised in particular by the input of pollutants, having a negative impact on the soil functions and quality. In addition, land claims for SWM facilities may conflict with other land uses. These risks are particularly relevant for those regions where no SWM projects are planned or currently on-going.

Failure to implement the ISWM Investment Plan will result in the described significant risks, in particular regarding the inputs of pollutants.

3.5 Water

3.5.1 Environmental Baseline and Key Problems

Albania has approximately 362 km of coastline along the Adriatic and Ionian Sea.

The country is rich in water resources. The hydrographical basin that feeds the water courses of Albania has a total area of 43,305 km².[22]

Seven rivers and their tributaries drain towards the Adriatic Sea. The longest river is the Drin with 282 km in length. A total of 250 lakes occupy 4 % of the Albanian territory.

The rivers of Albania are an important source of hydropower. There ae a total of five reservoirs on the two large rivers Drin and Mat. At the Devoll various dams are under construction and planning respectively in operation. Many smaller rivers are also used for power generation.

[22] UNECE, 2012.Albania Environmental Performance Reviews - Second review

In communist times, small irrigation reservoirs have been set up throughout the country, including an extensive network of irrigation channels. At the same time, before the Second World War, the heavily swamped coastal plains were systematically drained to expand the agricultural area.

Flood events occur not only for snowmelt but also after heavy rains. The reasons are many; they also include the effects of blocked watercourses, inter alia by waste washed into rivers and channels.

For assessing the water quality, both for surface waters and for groundwater, the current monitoring data on the quality and quantity of water resources are insufficient. Basically it can be stated that most of the rivers are polluted in their middle and lower reaches. In contrast most groundwater bodies appear to be still of good quality, although there are insufficient monitoring data to assess their possible pollution, e.g. with heavy metals.[23]

The bathing water quality on the beaches along the Albanian coast is monitored regularly:[24] 84.3 % of all existing coastal bathing waters met at least sufficient water quality standards in 2017. 12 bathing water sites were classified as poor, which is an improvement in comparison to recent years.

In summary, the following environmental shortfalls of the present SWM can be identified with regard to water.

Table 18 Environmental shortfalls of the present SWM system with regard to water

SWM activity	Environmental shortfalls
Poor waste collection rates	• Scattering of waste and indiscriminate dumping pollute surface water and groundwater • Waste washed into rivers leads to blockage and finally accumulates in the sea
Disposal on poorly managed or uncontrolled dumpsites	• Leachate emissions from landfills pollute surface water and ground water (with POP and other organic components, heavy metals and their salts)

3.5.2 Likely Evolution of the Environment without the ISWM Investment Plan

The likely evolution of the water resources is influenced, among other things, by the current and planned measures/ projects in SWM. One of the objectives of the implementation of these measures/ projects is to reduce the pollution of the water by leachate in the future and thus to support achieving or maintaining a good ecological and

[23] See UNECE: Albania – Environmental Performance Reviews; New York and Geneva 2018.
[24] See European Environment Agency: Albanian bathing water quality in 2017; Albania, May 2018.

chemical status of surface waters and groundwater. Particular challenges in this regard are the existing dumpsites, which urgently need to be rehabilitated.

If the ISWM Investment Plan is not implemented, it is expected that the existing risks will persist, at least in part. This concerns both the risk of pollution of groundwater and surface water from leachate as well as the risks of illegal disposal in water courses as well as the erosion of waste disposed in existing landfills in unsuitable locations.

3.6 Air Quality and Climatic Factors

3.6.1 Environmental Baseline and Key Problems

The geographic position of Albania determines its Mediterranean climate, characterised by mild and humid winters followed by hot and dry summers. The average annual temperature in Albania is 16°C. Rainfall occurs mainly during the second half of the year; the average annual rainfall is just less than 1,200 millimetres.

Climatic conditions differ considerably according to regions: The coastal plains have a strong maritime influence, causing a gradient of lower temperatures and reduced precipitation eastwards from the coast. Winters are hard in the northern and eastern mountainous regions. In winter, many places in these areas are cut off from the outside world for months due to snow.

Even though the current network for air quality monitoring does not allow for providing a correct picture of the general Albanian air quality, it is assumed that air quality improved greatly in the course of the last decade.

The number of existing monitoring stations is limited. Nonetheless, a decrease in sulphur oxides (SO2) and ammonia has been detected. By contrast, emissions of nitrogen oxides (NO2) and non-methane volatile organic compounds as well as particulate matter (PM 10, PM 2.5) have increased.[25] However, as Albania has reduced the use of fossil fuels in energy production and industrial processes and has introduced European standards for fuel quality, it is also expected that these emissions will improve in the future. Already for the period 2011 – 2013 at the monitoring stations in Tiranë a decrease of 20 – 30 % has been observed at the concentration level of PM 10 and PM 2.5, which is due to improvements made in infrastructure and to several legislative measures undertaken.[26]

[25] See UNECE: Albania – Environmental Performance Reviews, Third Review; New York and Geneva, 2018.
[26] See European Environment Agency: Albania Country Briefing – The European Environment – State and Outlook 2015.

The following figures show average measured concentrations of air pollutants in Albania.[27]

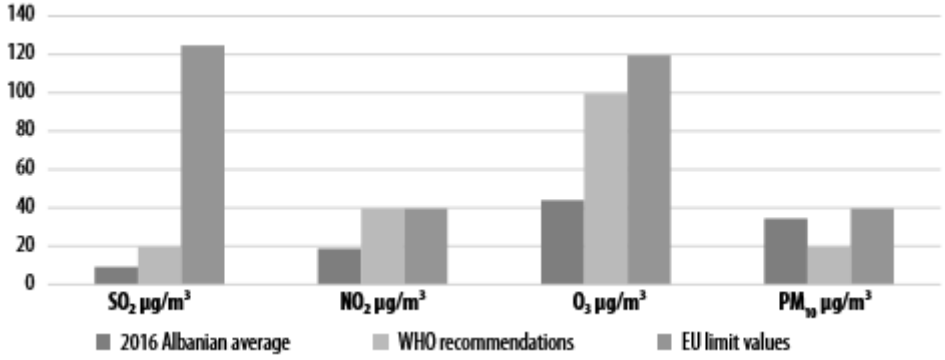


Figure 9 Average concentration of SO2, NO2, O3 and PM 10 in Albania compared with WHO recommendations of limit values and limit values set by the EU [2016]

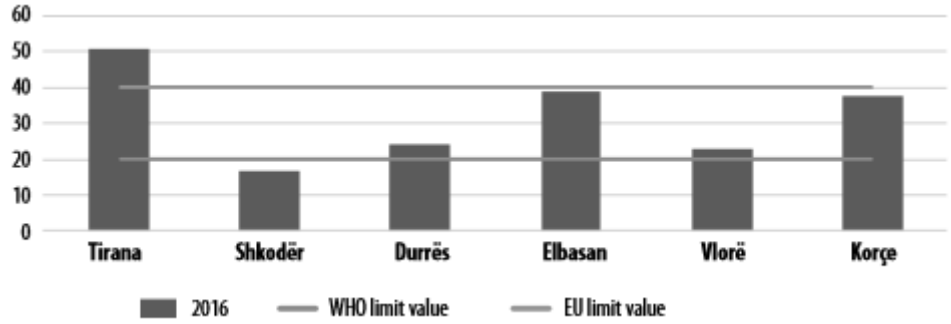


Figure 10 Annual mean concentration of PM 10 in selected cities [2016]

In Albania, the health impact of air pollution is not assessed. In consequence, the population, especially vulnerable groups, is not provided with sufficient and timely data on air quality accompanied by recommendations on health protection.[28]

Looking at the greenhouse gas (GHG) emissions, it can be stated that the total Albanian GHG emissions are relatively low: 9,036.8 Gg of CO2 eq. in 2009. However, it should be mentioned that the most recent official documents/ data, such as the country's 2016 Third National Communication on Climate Change are based on relatively old data up to 2009, referring to the base year 2005.[29] In terms of CO2 eq., the waste sector has a share of just over 7 %. The following figure provides an overview on the CO2 eq. emissions from all

[27] See UNECE: Albania – Environmental Performance Reviews, Third Review; New York and Geneva, 2018.
[28] See UNECE: Albania – Environmental Performance Reviews, Third Review; New York and Geneva, 2018.
[29] See UNECE: Albania – Environmental Performance Reviews, Third Review; New York and Geneva, 2018.

Albanian economic sectors for the year 2005. It is assumed that the main contributor of GHG emissions from the waste sector is solid waste disposal.[30]

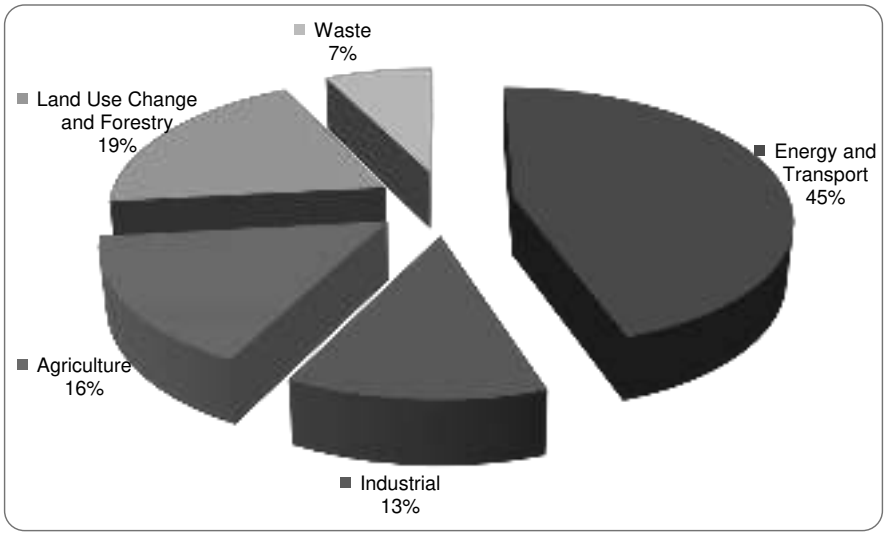


Figure 11 CO2 eq. Emissions from all economic sectors for the year 2005 [%]

Based on the existing SWM system, the following environmental shortfalls can be observed.

Table 19 Environmental shortfalls of the present SWM system with regard to air quality and climatic factors

SWM activity	Environmental shortfalls
Poor waste collection rates	• Indiscriminate dumping and burning of waste especially in areas so far not served by the waste collection system (dust, odour and gas emissions)
Poor recycling rates and lack of separate collection (incl. organic waste fractions)	• Negative impact on climate change, since potentials to avoid GHG emissions through recycling of natural resources or reduction of methane emissions from organic waste are not used
Disposal on poorly managed or uncontrolled dumpsites	• Methane gas emissions from landfills and dumpsites • Dust and odour emissions • Landfill fires cause air pollution resulting from incomplete combustion • Further conflicts related to poorly selected SWM facilities

[30] See Albanian Ministry of environment: Third National Communication of the Republic of Albania under the United Nations Framework Convention on Climate Change; Tiranë, June 2016

3.6.2 Likely Evolution of the Environment without the ISWM Investment Plan

The likely evolution of the air quality and climatic factors will be characterised by the further global development of climate change as well as by the further implementation of measures to reduce emissions of air pollutants. Globally, GHG concentration in the atmosphere will continue to increase. Nationally, it is not expected that air pollutant emissions will decrease significantly as Albania's development progresses. The implementation/ operation of state-of-the art technologies and compliance with national and European standards can help to mitigate the effects.

If the ISWM Investment Plan is not implemented, it is to be feared that the implementation of sustainable and advanced integrated waste management will not be supported nationwide. Local/ regional improvements are likely to be achieved where projects/ measures are already planned or under implementation, while the situation in other regions will not change or even worsen.

3.7 Landscape

3.7.1 Environmental Baseline and Key Problems

Large parts of the country are characterised by unspoiled nature and diversified landscapes. In terms of its size, Albania is one of the most biodiverse countries in Europe. Albania is part of the so-called "European Green Belt" and the so-called "Blue Heart of Europe". Although Albania has a diversified, partially unspoiled landscape and rich biodiversity, it is also facing a number of environmental problems, including overgrazing, deforestation, poaching and overfishing.

Urban sprawl and environmental pollution (such as poor waste collection or illegal dumping), especially in urban areas along the coast and in major river valleys, are a widespread phenomenon in Albania.

The current SWM system has the following environmental shortfalls with regard to landscape.

Table 20 Environmental shortfalls of the present SWM system with regard to landscape

SWM activity	Environmental shortfalls
Poor waste collection rates	• Scattering of waste and indiscriminate dumping especially in areas so far not served by the waste collection system negatively impact on the overall appearance in the respective areas • Scattering of waste and indiscriminate dumping pollute the landscape (including negative impact for tourism)
Poor recycling rates and lack of separate collection (incl. organic waste fractions)	• Increased waste amounts for disposal
Disposal on poorly managed or uncontrolled dumpsites	• Dust and odour emissions impacting nearby sensitive receptors • Light components of disposed waste carried away by the wind pollute surrounding areas

3.7.2 Likely Evolution of the Environment without the ISWM Investment Plan

It is expected that urbanisation will continue, and that this will increase the pressure on the landscape and environment in urban areas. At the same time, it is expected that the rural areas, especially remote rural areas, will continue to depopulate, which will have a positive impact on landscape and environmental protection. It is assumed, that these and other factors will have a strong impact on the evolution of the landscape.

Therefore, a non-implementation of the ISWM Investment Plan will only result in a few minor local/ regional impacts, most likely in the remote areas of the country.

3.8 Architectural, Archaeological and Cultural Heritage

3.8.1 Environmental Baseline and Key Problems

Albania is home to many valuable monuments and the the Albanian landscape is characterised by castles, forts and citadels. Sacred architectural monuments, such as cathedrals and churches, mosques and tekkes, are found throughout the country from different eras. The architectural landscape is richly revealed by archaeological finds.

Albania has as three sites on the UNESCO World Heritage Site List:[31]

- Butrint (cultural site),[32]
- The Historic Centres of Berat and Gjirokastër (cultural sites)[33] as well as

[31] See UNESCO: World Heritage List; http://whc.unesco.org/en/list/
[32] See UNESCO: World Heritage List; https://whc.unesco.org/en/list/570

- The Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe (natural site, transboundary property)[34]

Figure 12 UNESCO World Heritage Sites in Albania (left: Butrint, middle: Historic Centres of Berat and Gjirokastër, right: Primeval Beech Forests of the Carpathians)

Further sites are on the UNESCO World Heritage Site Tentative List:[35]

- Royal tombs of Selca e Poshtme
- Amphitheatre of Durrës
- Natural and Cultural Heritage of the Ohrid Region
- The Ancient City of Apollonia
- The Castle of Bashtova

In addition, the Codices of Berat (Codex Beratinus) are inscribed in the UNESCO's Memory of the World Register.[36]

It can be assumed that there are many architectural and cultural heritage sites in Albania as well as, in particular, archaeological heritage sites, which are neither known nor fully registered with the responsible authorities. These supposed cultural monuments are to be protected as much as the known ones, not only because of their importance for the

[33] See UNESCO: World Heritage List; https://whc.unesco.org/en/list/569

[34] See UNESCO: World Heritage List; https://whc.unesco.org/en/list/1133

[35] See UNESCO: Tentative Lists; https://whc.unesco.org/en/tentativelists/state=al

[36] See UNESCO: Memory of the World; http://www.unesco.org/new/en/communication-and-information/memory-of-the-world/register/full-list-of-registered-heritage/registered-heritage-page-2/codex-purpureus-beratinus/

cultural heritage of Albania, but also because of their potential for the development of cultural tourism in Albania.

Environmental shortfalls that arise from the current SWM system and can have a negative impact on cultural heritage are summarized below

Table 21 Environmental shortfalls of the present SWM system with regard to landscape

SWM activity	Environmental shortfalls
Poor waste collection rates	• Scattering of waste and indiscriminate dumping especially in areas so far not served by the waste collection system negatively impact on the surrounding areas (e.g. visual impacts due to scattered waste) • Scattering of waste and indiscriminate dumping pollute the surrounding areas (such as central squares, streets or historically important places)
Disposal on poorly managed or uncontrolled dumpsites	• Dust and odour emissions impacting nearby sensitive receptors and land uses • Light components of disposed waste carried away by the wind pollute the surrounding areas • Further/ potential conflicts related to poor site selection of SWM facilities

3.8.2 Likely Evolution of the Environment without the ISWM Investment Plan

No general tendencies can be predicted for the likely evolution of the architectural, archaeological and cultural heritage. Existing risk for these assets will continue regardless of the implementation or non-implementation of the ISWM Investment Plan, as they are less influenced by SWM than by other factors.

Nevertheless, improving the overall environmental situation through improved waste management will also have a positive impact on the evolution of the architectural, archaeological and cultural heritage.

4 Assessment of Environmental Impacts

4.1 Assessment of Alternatives

An assessment of reasonable alternatives is required as part of the SEA process. Due to the strategic nature of the ISWM Investment Plan and the far reaching effects, in the Technology Development Phase different technology options for waste management have been considered and discussed under the following aspects:

- Implications of policy and regulation framework

- Identification of policy conform and proven technology options
- Financial feasibility of proven technology option

After the deduction of implications of the policy and regulation framework, policy conform technology option were identified as presented in the following table.

Table 22 Considered alternatives

<table>
<tr><th></th><th colspan="2">Mixed waste</th><th>Separated waste</th><th>Inert Waste</th></tr>
<tr><td>Street Cleaning</td><td colspan="2">Street cleaning</td><td></td><td rowspan="7">Inert Waste Management</td></tr>
<tr><td>Waste Collection</td><td colspan="2">Waste collection</td><td>Separate waste collection</td></tr>
<tr><td>Transport and Transfer</td><td colspan="3">Transfer and Transport</td></tr>
<tr><td>Mechanical Treatment</td><td>Dirty MRF</td><td rowspan="2">Mechanical Biological Treatment (MBT)</td><td>Clean MRF</td></tr>
<tr><td>Biological Treatment</td><td>Biological drying</td><td>Composting, Digestion</td></tr>
<tr><td>Thermal Treatment</td><td colspan="2">Incineration,
Pyrolysis,
Gasification,
Plasma treatment,
Waste to Diesel Technology</td><td></td></tr>
<tr><td>Disposal</td><td colspan="2">Sanitary landfill,
landfill rehabilitation</td><td></td></tr>
</table>

The main focus was on the identification and selection of proven technologies (long-term experiences in construction and operation) and the consideration of the financially feasibility (considering synergies with on-going and planned donor funded projects).

Emerging waste to energy technologies, such as gasification and pyrolysis, have been well known processes for a long time, but only for well-defined feedstock like coal or wood. The experience with respect to the treatment of municipal waste is still very limited. It can be summarized that gasification, pyrolysis, plasma treatment and waste to diesel are not long-term proven technologies for municipal waste treatment and therefore are excluded (written in red in the table above). The ISWM Investment Plan is based on identified technologies, as written in black in the table above.

The ISWM Investment Plan has been developed on basic measures for a modern, integrated waste management in Albania. The physical implementation of the proposed

measures requires specific studies (e.g. feasibility studies) and detailed designs. This will only take place in subordinate planning and approval procedures.

This SEA study defines the framework for assessing the environmental impact and points out the aspects to be considered. These must be taken into account when choosing individual measures and, if necessary, when selecting sites for their implementation.

Generally, local environmental effects can only be definitively determined by taking into account detailed data/ information with a spatial reference based on detailed designs/ planning. If significant negative environmental effects arise, alternatives must be examined in the subsequent planning and approval procedures.

4.2 Methodical Approach for Environmental Impact Assessment

This SEA study identifies, describes and assesses the likely adverse impacts on the environment, and where appropriate, presents measures to prevent and mitigate adverse environmental impacts.

Subjects of protection to be considered are as listed in Table 6:

- population and human health,
- biodiversity, flora and fauna,
- soils and land use as well as material assets,
- water,
- air quality and climatic factors,
- architectural, archaeological and cultural heritage, as well as
- landscape

The interactions between these subjects of protection must also be taken into account.

The following context is to be considered for the assessment of environmental impacts:

- Environmental impacts can only be assessed to the extent specified in the ISWM Investment Plan. If specific spatial reference and/ or detailed planning documents are necessary, the respective assessment will be done in the course of the subsequent planning and approval procedures.
- For the environmental assessment it is assumed that the measures are planned and implemented considering the best available technology. The detailed description of each technical measures provided in the Technical project's Report provides the basis for the assessment.

The identification, description and assessment of the environmental impact are done based on SEA profiles for the measures listed in the following table.

Table 23 Measures considered in SEA profiles

Type of measure/ abbreviation	Description
WZ	**Delineation of Waste Zones**
R	**Regional waste management components**
R01	**Waste transfer and long-distance transport**
R01-01	Ramp type transfer station
R01-02	Ramp type transfer station with compaction
R02	**Mechanical treatment (MRF)**
R02-01	Dirty MRF
R02-02	Clean MRF
R03	**Mechanical biological treatment (MBT)**
R03-01	MBT with anaerobic digestions
R03-02	MBT with stabilisation
R03-03	MBT with composting
R04	**Anaerobic digestion**
R05	**Waste incineration (with energy recovery)**
R05-01	Moving grate incineration
R06	**Sanitary landfill (safe waste disposal)**
R06-01	Sanitary landfill
R06-02	Landfill rehabilitation
L	**Local waste management components**
L01	**Street cleaning**
L01-01	Manual street sweeping
L01-02	Mechanical street sweeping
L02	**Waste collection (incl. separate collection)**
L02-01	Collection of mixed waste
L02-02	Collection of organic waste
L02-03	Collection of dry recyclables
L03	**Composting (material recovery)**
L03-01	Windrow composting plant
L03-02	Fully automated in-house plant
L04	**Inert waste management**
L04-01	Mobile treatment
L04-02	Stationery treatment
L04-03	Landfilling

The measures are assessed in terms of their overall impact. The respective specific local conditions are disregarded in this evaluation.

The impacts of the measures will be determined, described and assessed in terms of the environmental objectives defined in chapter 2 for the protected items listed in Table 8 in accordance with the classification below.

Table 24 Classification of the environmental impacts

Symbol	Classification
++	In general very positive environmental impacts
+	In general positive environmental impacts
O	No significant environmental impact
-	Possible adverse environmental impacts
--	Possible very adverse environmental impacts

In particular, the assessment/ classification is based on adverse environmental impacts and their possible severity, their potential complexity, their possible duration/ frequency or their possible irreversibility. The potential environmental impacts are always assessed qualitatively.

If (significant) adverse environmental impacts cannot be excluded, the respective measures must be assessed in more detail within the framework of subsequent approval and assessment procedures, i.a. with a specific spatial reference and based on more detailed data and information. That is to say that in the framework of this SEA a worst-case analysis is prepared with regard to potential (significant) adverse environmental impacts in terms of preventive environmental protection.

4.3 SEA Profiles of Proposed Measures

In the introductory paragraphs of each SEA profile, both the respective measure and its environmental impacts are summarised, as well as recommendations for the prevention and reduction of adverse environmental impacts, which are to be referred to in subsequent planning and approval procedures. The respective evaluation tables show the classified assessment of each measure, both per subject of protection and as a comprehensive overall assessment.

4.3.1 Delineation of Waste Zones

4.3.1.1 Justification for the Delineation of Waste Zones

For the whole of Albania, waste zones are defined so that all municipalities are assigned to a specific regional waste management facility.

Essential aspects for the designation of waste zones were, on the one hand, the spatial structure and accessibility as well as the population size and development. From these framework conditions, both the quantities of generated and collected waste can be estimated. The total waste amount collected and delivered to a SWM facility within a waste zone should be in the range of 100 Mg/d in order to have an economical operation of the regional SWM facility.

Information on the existing sanitary landfills as well as the existing and planned incinerators has been compiled. The existing catchment areas of these waste facilities were mapped. Planned waste facilities and respective catchment areas as well as current or planned waste management projects were also mapped.

Based on these considerations, a total of ten waste zones were demarcated in Albania, as shown in the following figure.

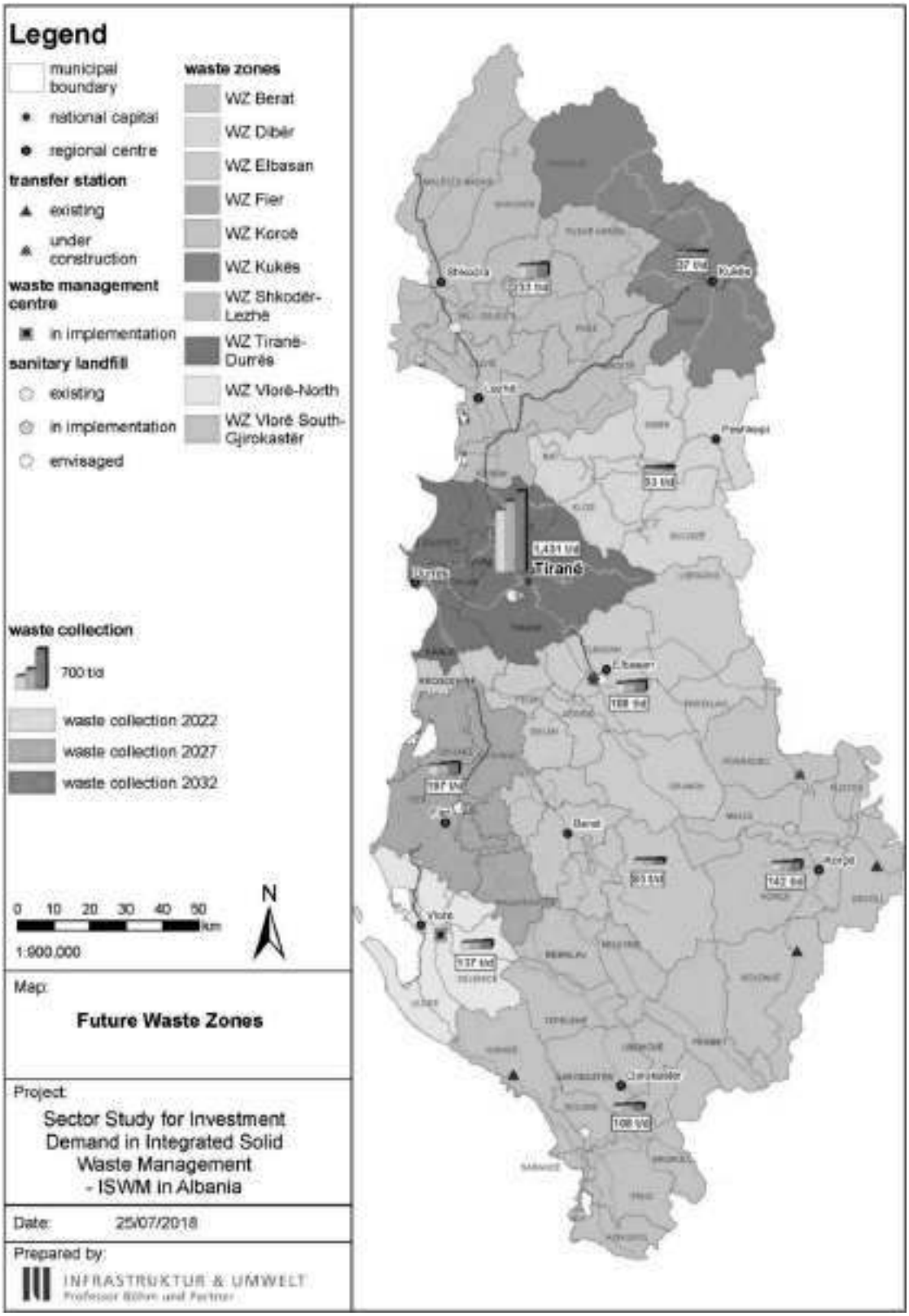


Figure 13 Future waste zones

4.3.1.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

The waste zones ensure that the basic requirements for a sustainable operation of regional waste management facilities, such as economic aspects and logistics, are met.

Through GIS mapping (positive and negative mapping), potential locations for sanitary landfills and other regional waste treatment facilities can be identified for waste zones without an agreed location for such facility.

For the purpose of the site identification a GIS data base was prepared covering all of Albania. In the negative mapping, based on the requirements set by the legislation and standards, criteria for the exclusion of unsuitable areas were compiled.

In the remaining (not excluded) areas a positive mapping was carried out to identify suitable areas for the implementation of a regional waste management centre. The results of this exercise are candidate areas for the future waste management centres as well as aspects to be considered in further investigations required for final site selection for a potential investment project. These data and information are also available as GIS layer and data base.

Using the Integrated Solid Waste Management – Investment Planning Tool (ISWM-IPT) future investments on regional and local level can be planned and actualised interactively.

The following figure illustrates the basic scheme of the ISWM-IPT Albania.[37]

[37] The planning horizon is divided into three phases: Phase 1: 2018 - 2022, Phase 2: 2023 - 2027, Phase 3: 2028 - 2032.

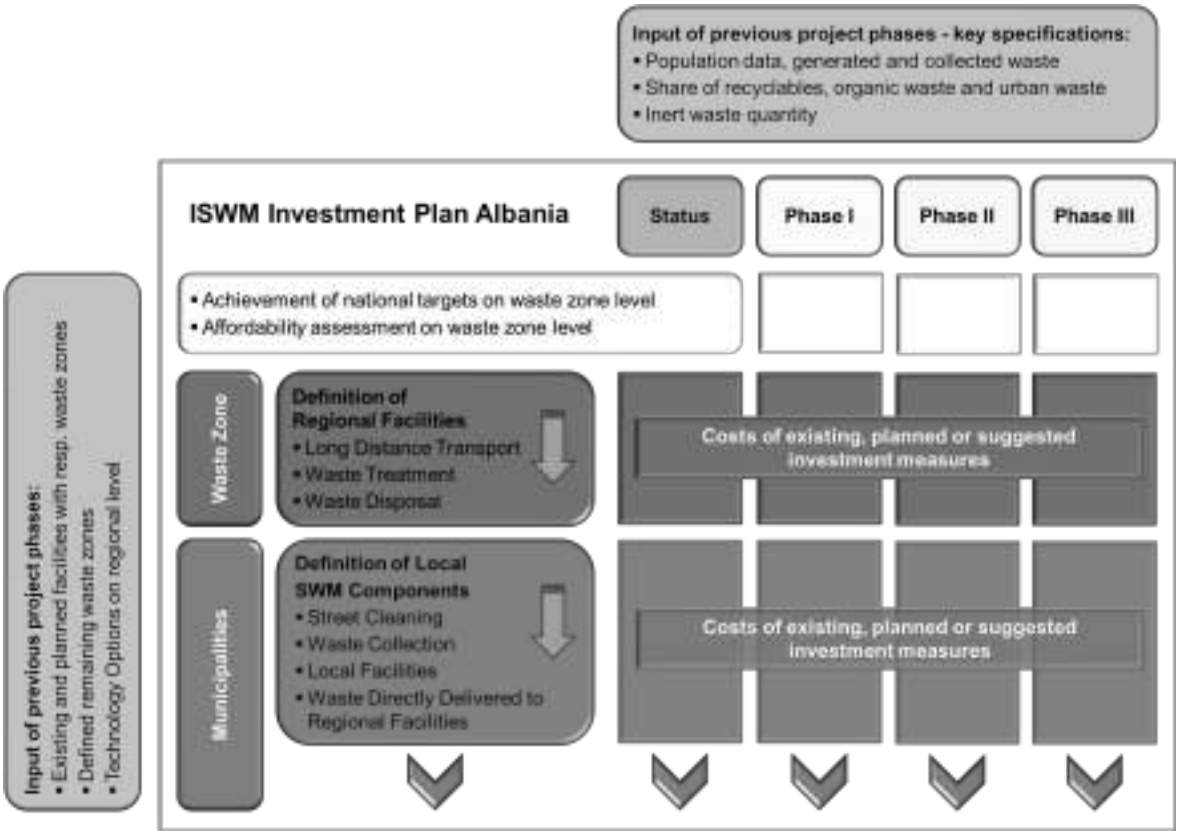


Figure 14 Basic scheme of the ISWM Investment Planning Tool

The following table assesses the environmental impacts of dividing the country into waste areas as well as implementing integrated, modern SWM systems in the waste zones.

Table 25 Environmental assessment for delineation of waste zones

WZ	Delineation of Waste Zones

Environmental objective/ SEA target		Abbreviation	Assessment
Population and human health			
	Improvement of quality of life	WZ	+
	Protection of human health	WZ	++
Biodiversity, flora and fauna			
	Protection of natural and biological resources	WZ	+
	Protection of protected areas and their natural resources	WZ	+
Soils and land use as well as material assets			
	Preservation of healthy and ecological functions of soil	WZ	+
	Reduction of the use of resources and improving the efficiency of such use	WZ	+
	Responsible utilisation of natural resources	WZ	+

Environmental objective/ SEA target	Abbreviation	Assessment
Water		
Protection of surface water as well as groundwater and improvement of its ecological status	WZ	+
Protection of surface water as well as ground water and improvement of its chemical status	WZ	+
Air quality and climatic factors		
Reduction and stabilization of greenhouse gas emissions	WZ	++
Protection and improvement of air quality	WZ	+
Landscape		
Preservation of landscape diversity	WZ	O
Architectural, archaeological and cultural Heritage		
Conservation and protection of the assets of cultural heritage	WZ	O
Overall environmental assessment		
	WZ	**+**

4.3.2 Regional Waste Management Components

4.3.2.1 Waste Transfer and Long Distance Transport

4.3.2.1.1 Description of Technology

The most common and viable transport options for countries like Albania are the transport of waste in large open top containers or in closed containers with compaction of waste.

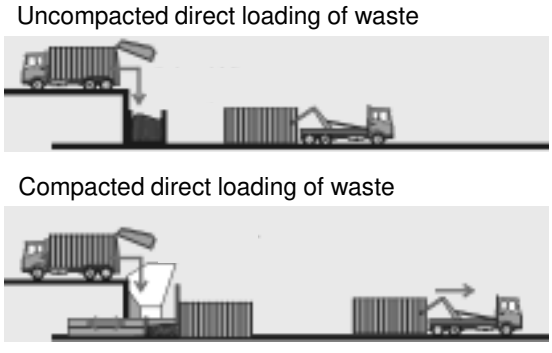


Figure 15 Principles of un-compacted and compacted direct loading in transfer stations[38]

The compaction of waste can be done with stationery presses or a compaction unit attached to the semi-trailer or roll-on/ off container. The changeable containers, like roll-on/ off containers, offer the maximum flexibility and are a proven technology with low

[38] https://www.zaoe.de

investment and operating costs. If the road conditions are suitable, these trucks might transport one additional container on a trailer. The compaction of the waste before transport might make sense if the original density of the waste is low. For residual waste in Albania, a high density is to be considered, because of the high proportion of organic waste. Furthermore, the compaction units are prone to breakdowns so that the availability of the transfer station is more vulnerable compared to transfer stations without compaction units. Anyway, the need for compaction of waste has to be assessed case-by-case, comparing costs of alternatives on the base of waste composition and transport distances.

4.3.2.1.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

The reduction of the transport processes with the utilisation of long-haul distance transportation trucks reduces the traffic on the roads and thus related emissions, greenhouse gas emissions, noise, dust. In this respect, the transfer stations with compaction units have an advantage compared to transfer station without waste compression.

In order to prevent the spillage of waste and reduce odour emissions, the open top containers shall be covered with a tarpaulin during transport. The direct loading of waste into the transportation containers remedies the risk of a pollution of water or soil.

Anyway there might be some negative impacts of transfer stations like odour, dust, noise, and vehicle traffic on the road to the transfer station. In order to keep these impacts at minimum, a proper site selection process and an environmental impact assessment is necessary. Furthermore, with a proper design and good management practices, the emissions can be minimised as well. Even a partly enclosure of the unloading area would minimise the dust emissions. Immediate removal of full containers, disposal only in containers and coordination of delivery times with municipalities, can be listed as example good practices.

Table 26 Environmental assessment for waste transfer and long-distance transport

R01	**Waste transfer and long-distance transport**
R01-01	Ramp type transfer station
R01-02	Ramp type transfer station with compaction

Environmental objective/ SEA target		**Abbreviation**	**Assessment**
Population and human health			
	Improvement of quality of life	R01-01	++
		R01-02	+

Environmental objective/ SEA target		Abbreviation	Assessment
	Protection of human health	R01-01	++
		R01-02	-
Biodiversity, flora and fauna			
	Protection of natural and biological resources	R01-01	O
		R01-02	O
	Protection of protected areas and their natural resources	R01-01	O
		R01-02	O
Soils and land use as well as material assets			
	Preservation of healthy and ecological functions of soil	R01-01	+
		R01-02	+
	Reduction of the use of resources and improving the efficiency of such use	R01-01	+
		R01-02	++
	Responsible utilisation of natural resources	R01-01	+
		R01-02	++
Water			
	Protection of surface water as well as groundwater and improvement of its ecological status	R01-01	O
		R01-02	+
	Protection of surface water as well as ground water and improvement of its chemical status	R01-01	O
		R01-02	+
Air quality and climatic factors			
	Reduction and stabilization of greenhouse gas emissions	R01-01	+
		R01-02	++
	Protection and improvement of air quality	R01-01	+
		R01-02	++
Landscape			
	Preservation of landscape diversity	R01-01	O
		R01-02	O
Architectural, archaeological and cultural Heritage			
	Conservation and protection of the assets of cultural heritage	R01-01	O
		R01-02	O
Overall environmental assessment			
		R01-01	**+**
		R01-02	**++**

4.3.2.2 Mechanical Treatment

The main objectives of recycling activities are to save resources and to minimize the environmental impact of waste by reducing the amount of waste landfilled. According to

DCM No. 418, LGUs shall increase materials recovery from municipal waste through recycling (paper, metal, plastic and glass) to 17 % by 2020.

There is considerable potential for an increase in recycling activities in Albania, as limited progress has been made to implement the principles of the waste hierarchy so far. Currently waste management mainly focuses on collection and disposal with little emphasis being given to waste minimisation, reuse, and material recovery (recycling).

4.3.2.2.1 Description of Technology

In general, there are two options for sorting of recyclables and other waste fractions – "dirty" or "clean" material recovery facilities (MRF). In dirty MRFs components of a mixed waste stream are segregated by means of manual picking and/ or mechanical separation technics. Screening and sorting technics are used to separate the waste stream into recyclables and non-recyclable residual wastes for disposal or further processing.

Figure 16 MRF elements: Bunker/bag opener, hand assorting, sieve, baling press[39]

In clean MRFs components of source separated collected mixed recyclables are segregated. Compared to dirty MRFs the operation of sorting is less challenging and the recovery rates are (theoretically) higher. In contrast, extra efforts for separate collection are required.

[39] INFRASTRUKTUR & UMWELT, Orhan Boran

Even though MRF designs are classified as low tech, experienced management, monitoring and quality control are necessary to assure good performance.

Since there are so far only few recycling activities implemented by municipalities in Albania, a stepwise approach is recommended for the implementation of such a complex system. This way, both the separate collection and the know-how of the municipalities could be gradually developed.

4.3.2.2.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

During the treatment process of MRFs, odour, dust, and noise are the main emissions. The enclosed plants allow capturing of most of the emissions. Depending on the intensity of odour emissions an exhaust air treatment could be required.

Special consideration has to be given to the sorting staff in the MRFs; ventilation of sorting cabins has to be state of the art in order to minimize negative impact on workers.

Overall, assuming state of the art operations, potential negative environment impacts of MRFs are low compared to other technology options.

Benefits are material recovery and thus preservation of resources as well as reduction of waste to be landfilled.

Table 27 Environmental assessment for mechanical treatment (MRF)

R02	**Mechanical treatment (MRF)**
R02-01	Dirty MRF
R02-02	Clean MRF

Environmental objective/ SEA target		**Abbreviation**	**Assessment**
Population and human health			
	Improvement of quality of life	R02-01	+
		R02-02	o
	Protection of human health	R02-01	+
		R02-02	+
Biodiversity, flora and fauna			
	Protection of natural and biological resources	R02-01	O
		R02-02	O
	Protection of protected areas and their natural resources	R02-01	O
		R02-02	O

Environmental objective/ SEA target	Abbreviation	Assessment
Soils and land use as well as material assets		
Preservation of healthy and ecological functions of soil	R02-01	+
	R02-02	++
Reduction of the use of resources and improving the efficiency of such use	R02-01	+
	R02-02	++
Responsible utilisation of natural resources	R02-01	+
	R02-02	++
Water		
Protection of surface water as well as groundwater and improvement of its ecological status	R02-01	+
	R02-02	++
Protection of surface water as well as ground water and improvement of its chemical status	R02-01	O
	R02-02	O
Air quality and climatic factors		
Reduction and stabilization of greenhouse gas emissions	R02-01	+
	R02-02	++
Protection and improvement of air quality	R02-01	+
	R02-02	++
Landscape		
Preservation of landscape diversity	R02-01	O
	R02-02	O
Architectural, archaeological and cultural Heritage		
Conservation and protection of the assets of cultural heritage	R02-01	O
	R02-02	O
Overall environmental assessment		
	R02-01	**+**
	R02-02	**++**

4.3.2.3 Mechanical Biological Treatment (MBT, Material and/ or Energy Recovery)

4.3.2.3.1 Description of Technology

Over the last decade, with the application of strict landfill regulations, mechanical-biological treatment of waste became a well-established alternative or complement to waste incineration in Europe. Thus, there is a full scale operational experience with several MBT technologies. The level of technology applied at MBT plants varies from low to very high mostly depending on the legal requirements and purpose of the treatment. However, even with a low technology the emissions of landfills, landfill gas and leachate, can significantly be reduced.

As the name shows, there is a mechanical and a biological treatment process. The mechanical treatment phase might have various aims, such as the removal of inert materials or impurities and thus preparation of subsequent biological treatment, segregation of recyclable materials, and/ or preparation of refuse derived fuel (RDF). In the biological treatment phase the biomass or "compostable" fraction is processed through an anaerobic digestion, composting or bio-drying system with the purpose of mass reduction, production of compost-like material, biogas and/ or RDF, and/ or stabilisation of residues.

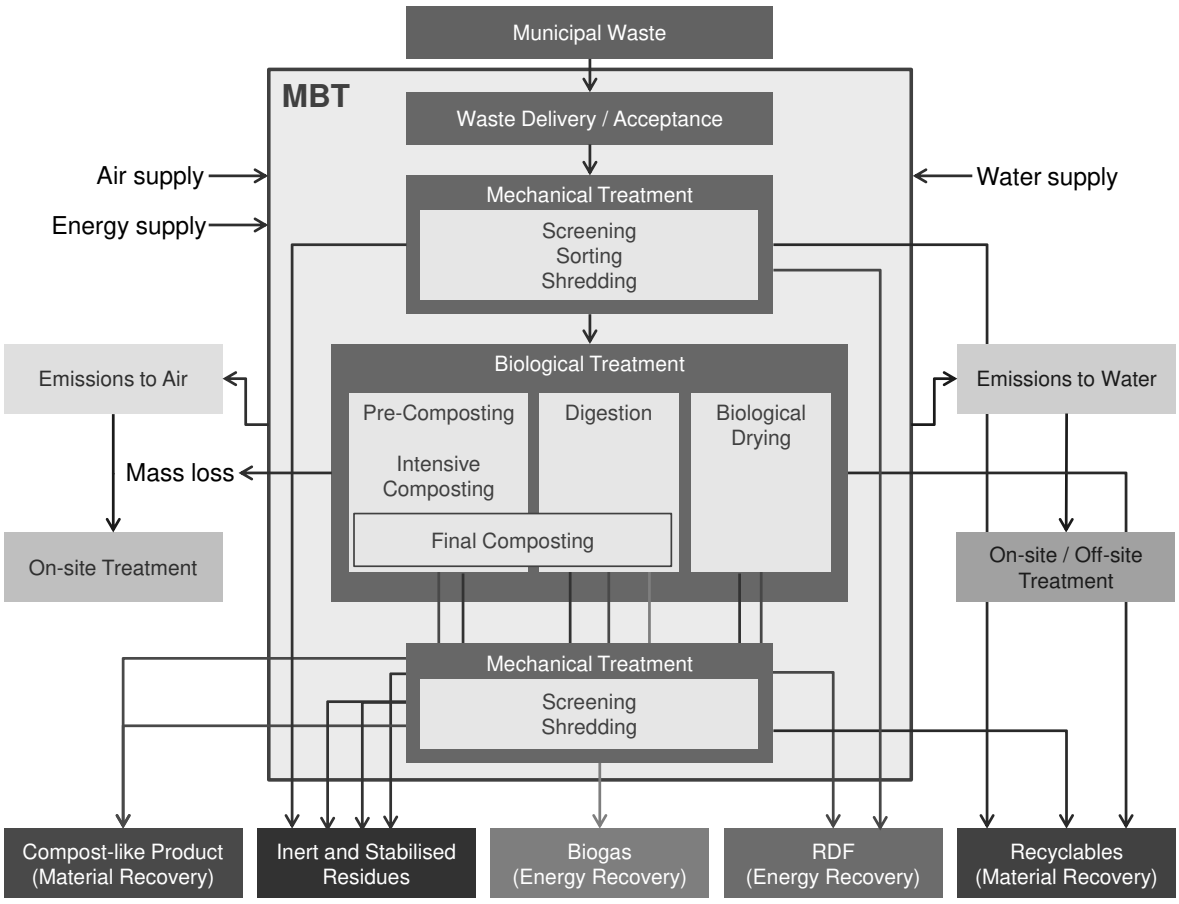


Figure 17 Process steps and outputs of MBT plants

4.3.2.3.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

The different configurations of MBT processes generate different types and amounts of emissions.

During the mechanical treatment process, odour, dust, and noise are the main emissions. The biological process generates emissions to water and air. Depending on the legal

requirements and on the base of the plant design the treatment technology for wastewater and exhaust air must be selected. In order to achieve the emissions standards in Germany, bio filter in combination with regenerative thermal oxidation (RTO) processes are applied for exhaust air treatment. Because of high energy demand and maintenance needs, the RTO process is a costly treatment process. The enclosed plants allow capturing of most of the emissions, but with high investment and operating costs.

The MBT process contributes significantly to the climate protection by reducing methane emissions from landfills as well as by replacing fossil fuels with RDF. According to a study made by the Faculty of Natural Sciences of University of Tiranë, the utilisation of RDF at two cement kilns in Albania would help Albania to achieve about 20-42 % of the CO_2 reduction targets for 2030[40].

Furthermore, the leachate generation in the landfills is reduced so that the risk of ground- or surface water pollution is minimised on the one side, and the costs for the leachate treatment are decreased on the other side. Further benefits are material recovery and thus preservation of resources as well as supply of renewable energy.

Table 28 Environmental assessment for mechanical biological treatment (MBT)

R03	**Mechanical biological treatment (MBT)**
R03-01	MBT with anaerobic digestions
R03-02	MBT with stabilisation
R03-03	MBT with composting

Environmental objective/ SEA target		**Abbreviation**	**Assessment**
Population and human health			
	Improvement of quality of life	R03-01	O
		R03-02	O
		R03-03	O
	Protection of human health	R03-01	-
		R03-02	O
		R03-03	+
Biodiversity, flora and fauna			
	Protection of natural and biological resources	R03-01	O
		R03-02	O
		R03-03	O

[40] Benefits from Usage of Alternative Fuels in the Cement Production, Stela Pepa, Alma Shehu, Department of Chemistry, Faculty of Natural Sciences, University of Tiranë, November 2016, http://www.uamd.edu.al/new/wp-content/uploads/2017/02/39.-Stela-Pepa.pdf

Environmental objective/ SEA target		Abbreviation	Assessment
	Protection of protected areas and their natural resources	R03-01	O
		R03-02	O
		R03-03	O
Soils and land use as well as material assets			
	Preservation of healthy and ecological functions of soil	R03-01	O
		R03-02	O
		R03-03	O
	Reduction of the use of resources and improving the efficiency of such use	R03-01	++
		R03-02	++
		R03-03	+
	Responsible utilisation of natural resources	R03-01	++
		R03-02	++
		R03-03	+
Water			
	Protection of surface water as well as groundwater and improvement of its ecological status	R03-01	++
		R03-02	++
		R03-03	O
	Protection of surface water as well as ground water and improvement of its chemical status	R03-01	++
		R03-02	++
		R03-03	O
Air quality and climatic factors			
	Reduction and stabilization of greenhouse gas emissions	R03-01	++
		R03-02	++
		R03-03	+
	Protection and improvement of air quality	R03-01	++
		R03-02	++
		R03-03	O
Landscape			
	Preservation of landscape diversity	R03-01	O
		R03-02	O
		R03-03	O
Architectural, archaeological and cultural Heritage			
	Conservation and protection of the assets of cultural heritage	R03-01	O
		R03-02	O
		R03-03	O
Overall environmental assessment			
		R03-01	**++**

Environmental objective/ SEA target	Abbreviation	Assessment
	R03-02	++
	R03-03	O

4.3.2.4 Anaerobic Digestion (Material and Energy Recovery)

In general, anaerobic digestion (AD) is a stabilization process of organic substances. With respect to energy and material recovery, the main targets of this technology option are the generation of biogas (production of electricity and heat) and the production of an arable soil conditioner.

In contrast, the anaerobic treatment of mixed household waste as component of a MBT plant (as described in Chapter 4.5) focuses mainly on the stabilization of the organic content of the waste in order to reduce both the amount of biodegradable municipal waste going to landfills as well as the respective resulting emissions.

Of course, the AD of separately collected organic waste, which is described in detail in this chapter, includes the abovementioned improvements regarding landfills and their emissions as well. A basic prerequisite for achieving all these targets is the separate collection of bio-waste. The additional expenditures required for this can be mitigated by the achievable revenues and monetary valued improvements of the environment and human health.

4.3.2.4.1 Description of Technology

Anaerobic digestion (AD) is a stabilisation process of organic substances. With respect to energy and material recovery, the main targets of AD of separately collected organic waste are the generation of biogas (production of electricity and heat) and the production of an arable soil conditioner. Further targets are the stabilisation of the organic content of the waste in order to reduce both the amount of biodegradable municipal waste going to landfills as well as the respective resulting emissions. A basic prerequisite for achieving all these targets is the separate collection of bio-waste. The additional expenditures required for this can be mitigated by the achievable revenues and monetary valued improvements of the environment and human health.

4.3.2.4.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

Since the AD is a closed system, no significant environmental impacts are to be expected as long as stable operation is ensured. However, no technical operation is possible without operating disruptions. For this reason, skilled staff, which intervene promptly in the

event of a malfunction, is essential. For example in case of leakage, leaking biogas must be burned in a controlled manner, which of course is associated with a slight environmental impact, but not with a lasting damage. Due to the encapsulation of anaerobic digesters, substrate losses due to damaged pumps or leaks of the reactor are rather unlikely. Moreover, the outputs of AD plants have also to be controlled with respect to the respective standards. Usage of contaminated digestate or discharge of untreated process water has to be avoided and therefore controlled.

In general, AD contributes indirectly to the climate protection by avoiding methane emissions from landfills. Also, due to stabilisation of the organic material, the settlements of landfill bodies can be improved compared to landfills with untreated municipal waste. Further benefits are material and energy recovery and thus preservation of resources.

Table 29 Environmental assessment for anaerobic digestion

R04	**Anaerobic digestion**

Environmental objective/ SEA target	Abbreviation	Assessment
Population and human health		
Improvement of quality of life	R04	O
Protection of human health	R04	-
Biodiversity, flora and fauna		
Protection of natural and biological resources	R04	O
Protection of protected areas and their natural resources	R04	O
Soils and land use as well as material assets		
Preservation of healthy and ecological functions of soil	R04	+
Reduction of the use of resources and improving the efficiency of such use	R04	++
Responsible utilisation of natural resources	R04	++
Water		
Protection of surface water as well as groundwater and improvement of its ecological status	R04	++
Protection of surface water as well as ground water and improvement of its chemical status	R04	++
Air quality and climatic factors		
Reduction and stabilization of greenhouse gas emissions	R04	++
Protection and improvement of air quality	R04	++
Landscape		
Preservation of landscape diversity	R04	O
Architectural, archaeological and cultural Heritage		
Conservation and protection of the assets of cultural heritage	R04	O

Environmental objective/ SEA target	Abbreviation	Assessment
Overall environmental assessment		
	R04	**++**

4.3.2.5 Waste Incineration (with Energy Recovery)

In the EU the Waste Incineration Directive[41] (WI Directive) sets air emission limit values and monitoring requirements for waste incineration. The WI Directive makes a distinction between:

- incineration plants, which are dedicated to the thermal treatment of waste
  - with heat and energy recovery
  - without heat and energy recovery
- co-incineration plants (such as cement or lime kilns, steel plants or power plants)

As the incineration of waste without energy recovery is no more a state-of-the-art technology, this type of facilities is not considered in this report.

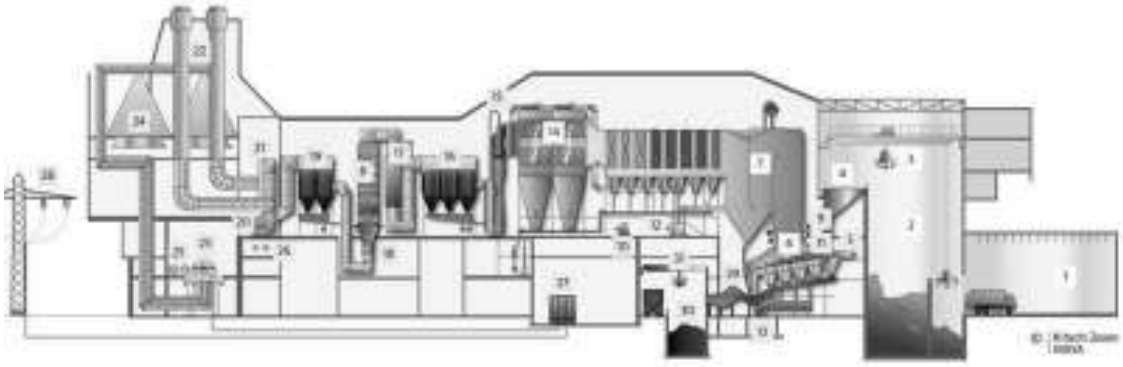
Co-combustion plants are plants which utilise waste as a secondary energy source in combination with other types of fuels. This type of treatment at combustion or cement plants is quite common in Europe[42]. There are even combustion plants which combust untreated municipal waste by applying stringent emission limit values laid down in the Waste Incineration Directive. Since Albania's hydro power plants (HHPs) generate more than 80 % of the electricity demand and new HPPs are under planning or construction, the possibility of co-combustion at fossil fuel fired power plants is limited. Furthermore, the organic content of the waste in Albania is very high and thus not really suitable for combustion without any pre-treatment. Therefore, the co-combustion of untreated waste is not considered in the ISWM Investment Plan.

4.3.2.5.1 Description of Technology

Incineration of waste means thermal treatment of waste in order to reduce its volume and hazard, at the same time to capture or destroy harmful substances which are or may be released during incineration and to recover energy, mineral and/ or chemical content from waste. As a result of these processes, an incineration plant consists of a complex set of interacting technical components.

[41] Directive 2000/76/EC on the incineration of waste

[42] Assessment and Summary of the Member States' Implementation Reports for the IED, IPPCD, SED and WID, WID Final Report, EC, 2016



Waste receiving and storage	Grate combustion and boiler	Flue gas treatment	Energy utilization	Residue handling
1 Tipping hall	4 Feed hopper	14 Electrostatic precipitator	23 Extraction-condensation turbine	29 Bottom ash extractor
2 Waste bunker	5 Ram feeder	15 Sodium bicarbonate injection	24 Air cooled condenser	30 Bottom ash bunker
3 Waste crane	6 Hitachi Zosen Inova grate	16 Fabric filter 1	25 District heating heat exchanger	31 Bottom ash crane
	7 Four-pass steam boiler	17 SCR DeNOx	26 Process steam extraction	
	8 External Economiser	18 Heat exchanger 1	27 Trafo	
	9 Secondary air injection	19 Fabric filter 2	28 Electricity Export	
	10 Secondary air fan	20 Induced draft fan		
	11 Recirculated flue gas injection	21 Heat exchanger 2		
	12 Recirculated flue gas fan	22 Stack		
	13 Primary air fan			

Figure 18 Components of a waste incineration plant[43]

There are various technologies to combust waste: Moving grate, rotary kiln, fluidised bed etc. The most common and well-proven technology is the mass burning with a moving grate where the waste is combusted at a temperature of 1,000 C or more on a grate with

[43] System diagram: Hitachi Zosen INOVA, http://www.hz-inova.com, Picture: INFRASTRUKTUR & UMWELT, Orhan Boran

combustion air injected from below the grate. In Europe approximately 90 % of installations treating municipal solid waste (MSW) use grates.

4.3.2.5.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

The major benefit of the waste incineration is the small footprint of the waste disposal in the environment due to significantly reduction of volume and quantity of waste to be disposed in landfills. Also the required land for the facility might be 10 % of the land required for the disposal of untreated waste. On the other side, the flue gas emissions and the residues from flue gas cleaning are major reasons for concern. In addition to solid residues which shall be disposed in hazardous waste landfills, polluted waste water might be generated if a wet flue gas cleaning system is used.

Considering the waste hierarchy, thermal energy recovery comes after material recovery. The material recovery shall be preferred option wherever it is feasible. If the recycling is not feasible because of any reason, the incineration of waste can be considered as an option. Separate collection activities targeting the collection of recyclable materials other than organic waste would decrease the calorific value of the waste to be delivered to the incineration plant. In Albania, where the organic fraction has the highest share in the municipal waste, this would mean the increase of auxiliary fuel usage and costs. Otherwise neither the targets of combustion (volume and mass reduction) nor the targets of energy recovery and flue gas cleaning can be achieved.

The metals extracted from out of the ash are usually of lower quality than those sorted out at source or at a sorting plant. The utilisation of bottom ash, usually as infill or in construction products, requires strict regulations, guidance and monitoring. Furthermore, while metals qualify for recycling targets, any other materials after the thermal treatment process, like bottom ash or residues from flue gas treatment, do not count towards recycling targets.

Table 30 Environmental assessment for waste incineration (with energy recovery)

R05	**Waste incineration (with energy recovery)**
R05-01	Moving grate incineration

Environmental objective/ SEA target	**Abbreviation**	**Assessment**
Population and human health		
Improvement of quality of life	R05-01	-
Protection of human health	R05-01	-

Environmental objective/ SEA target	Abbreviation	Assessment
Biodiversity, flora and fauna		
Protection of natural and biological resources	R05-01	O
Protection of protected areas and their natural resources	R05-01	O
Soils and land use as well as material assets		
Preservation of healthy and ecological functions of soil	R05-01	O
Reduction of the use of resources and improving the efficiency of such use	R05-01	+
Responsible utilisation of natural resources	R05-01	O
Water		
Protection of surface water as well as groundwater and improvement of its ecological status	R05-01	+
Protection of surface water as well as ground water and improvement of its chemical status	R05-01	+
Air quality and climatic factors		
Reduction and stabilization of greenhouse gas emissions	R05-01	O
Protection and improvement of air quality	R05-01	O
Landscape		
Preservation of landscape diversity	R05-01	O
Architectural, archaeological and cultural Heritage		
Conservation and protection of the assets of cultural heritage	R05-01	O
Overall environmental assessment		
	R05-01	**O**

4.3.2.6 Sanitary Landfill (Safe Waste Disposal)

The implementation of sanitary landfills is a central element of ISWM systems, as it should ensure safe and environmental compliant disposal of solid waste. Thus, independently of any chosen solutions for waste avoidance, waste recycling and waste treatment now and in the future, waste for disposal will remain.

Environmental burdens from waste disposal are mainly related to uncontrolled anaerobic decomposition of organic material of the disposed waste. This leads to negative effects like generation of landfill gas, leachate and bad odour as well as stability problems due to settlement of the landfill body.

These negative effects can be reduced by an appropriate selection of landfill sites, structural measures, such as liners, and optimised modes of landfill operation. In addition,

waste can be treated to reduce the organic content efficiently prior to disposal, so less emission will result from the disposed waste.

Current Situation in Albania

In general it can be stated that improper disposal of waste is the most serious problem of the current SWM in Albania. Main problems are related to

- wrongly selected locations (e.g. in river beds, inside settlements),
- absence of any measures to limit emissions (e.g. no coverage, fire control),
- dumping into rivers and important water resources, and
- poor (or none) operation of dumpsites (no budget, no equipment etc.).

Even in cases when municipalities spend considerable effort for city cleaning, the situation at the dumpsites is mostly neglected.

Commonly, with only a few exceptions, collected waste is mostly disposed on uncontrolled or wild dumpsites. Many dumpsites are located at unsuitable places and in most cases there are also no constructional or operational measures for protecting health and environment, such as entrance control, surface water management, base sealing system and leachate or gas collection system. Also the disposed waste is not regularly covered with soil or gravel.

In recent years, various projects have been implemented, focussing in the improvement of the landfills in the country, e.g. implementing sanitary landfills according to the standards of the EU landfill directive. Due to economy of scale, these projects were mostly planned for several municipalities or as regional facilities:

- Shkodër region: the Bushat Sanitary Landfill was built inside a fenced area of 23 ha and designed for a capacity of 1 million tons of waste to be collected from the regions of Shkodër and Lezhë. Start of operation was in July 2011. The site provides facilities such as a weighbridge, a sorting plant (not operational as of March 2017), leachate and surface water treatment systems (not operational), gas collection system (not well functioning), as well heavy equipment (compactor, bulldozer), and is managed by a joint-stock company. Due to some disagreements about the landfill fees, the actual waste quantities brought at the site have been much lower than the planned quantities and therefore the landfill operation unit costs have increased. Currently the landfill operations are restricted to waste pushing, levelling, and some soil covering.

- Vlorë region: the Bajkaj Sanitary Landfill, in operation since September 2015, is designed to serve a catchment area covering the whole southern part of the Vlorë region. The waste amounts currently received at the landfill are less than half of the originally planned amounts. Thus, unit costs are higher than expected, and financing of the landfill operations without subsidies will become difficult. The landfill is operated by a public service company established and owned by the Regional Council of Vlorë.
- In addition, it is the intention of the Albanian Government to establish an ISWM Project in the northern part of Vlorë region. As investment measures the project includes a new regional sanitary landfill, a sorting plant for mostly pre-sorted recyclables, a composting plant for pre-sorted organic waste, collection and transport equipment for municipal waste and the closure and rehabilitation of major existing dump sites. The implementation of the project started in 2018, financed by KfW.
- Korçë region: the construction of Maliq Sanitary Landfill is completed recently and landfill operations have started. Moreover, transfer stations have be constructed in Devoll and Kolonjë, while a third transfer station in Pogradec is still envisaged. The regional ISWM system is further supported by KfW.
- Tiranë region: the municipalities are currently using three different disposal sites, of which two are located within the Tiranë Region, namely the Shara Sanitary Landfill (serving Tiranë and Vorë Municipalities) as well as the Kamëz dumpsite (serving Kamëz Municipality). Kavajë and Rrogozhinë Municipalities are delivering their collected waste to a dumpsite in Durrës. So, except for Tiranë and Vorë Municipalities, the collected waste is disposed on dumpsites, which lack measures for environmental protection. But also at the Shara Landfill, although meant to be a sanitary landfill, leachate and landfill gas so far are not treated and impact negatively on the surrounding air, soil and water. Currently the concessionaire is rehabilitating the Sharra landfill and has started to operate a gas collection system, while the efforts are going on for setting up the leachate treatment.

4.3.2.6.1 Description of Technology

The implementation of sanitary landfills is a central element of ISWM systems, as it should ensure safe and environmental compliant disposal of solid waste. Thus, independently of any chosen solution for waste avoidance, waste recycling and/ or waste treatment a certain amount of residual waste will remain, which requires safe disposal.

Environmental burdens from waste disposal are mainly related to uncontrolled anaerobic decomposition of organic material of the disposed waste. This leads to negative effects like generation of landfill gas, leachate and bad odour as well as stability problems due to settlement of the landfill body.

These negative effects can be reduced by an appropriate selection of landfill sites, structural measures, such as liners, and optimised modes of landfill operation.

Figure 19 Layers of landfill sealing system according to EU standards

In order to ensure the compliance with European standards (defined in Directive 99/31/EC on Landfill of Waste) not only requirements regarding planning, construction and operation are to be considered, but also monitoring and controlling issues. In addition, the rehabilitation of existing dumpsites has to be taken into account and integrated in the whole process.

4.3.2.6.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

Uncontrolled anaerobic decomposition of organics on landfills/ dumpsites leads to the following negative effects:

- Generation of landfill gas, which contains a considerable amount of methane. Methane from landfills is one of the main sources of greenhouse gas emission.

- Generation of leachate, which is contaminated by the products of decomposition and other pollutants.
- Generation of bad odour, which may be disturbing for neighbouring settlements.
- Settlement of the landfill body, which may lead to stability problems, uncontrolled landfill gas emissions and water seeping into the landfill body.

Also controlled sanitary landfills have a negative impact on the environment. However, this impact is significantly lower compared to uncontrolled dumpsites. In order to meet the European standards a consistent monitoring of the entire operation process (delivery, disposal, emission control, etc.) is essential.

In order to avoid any adverse effects on the quality of life of the population in neighbouring areas (protection against emissions), the defined distances between sanitary landfills and settlements have to be observed. To reduce the environmental impacts of old landfills (like leachate infiltration and gas emissions) rehabilitation measures (properly designed surface sealing) are recommendable.

Table 31 Environmental assessment for sanitary landfill (safe waste disposal)

R06	**Sanitary landfill (safe waste disposal)**
R06-01	Sanitary landfill
R06-02	Landfill rehabilitation

Environmental objective/ SEA target		**Abbreviation**	**Assessment**
Population and human health			
	Improvement of quality of life	R06-01	O
		R06-02	+
	Protection of human health	R06-01	O
		R06-02	+
Biodiversity, flora and fauna			
	Protection of natural and biological resources	R06-01	O
		R06-02	O
	Protection of protected areas and their natural resources	R06-01	O
		R06-02	O
Soils and land use as well as material assets			
	Preservation of healthy and ecological functions of soil	R06-01	O
		R06-02	+
	Reduction of the use of resources and improving the efficiency of such use	R06-01	--
		R06-02	--

Environmental objective/ SEA target		Abbreviation	Assessment
	Responsible utilisation of natural resources	R06-01	--
		R06-02	--
Water			
	Protection of surface water as well as groundwater and improvement of its ecological status	R06-01	O
		R06-02	+
	Protection of surface water as well as ground water and improvement of its chemical status	R06-01	O
		R06-02	+
Air quality and climatic factors			
	Reduction and stabilization of greenhouse gas emissions	R06-01	O
		R06-02	+
	Protection and improvement of air quality	R06-01	O
		R06-02	+
Landscape			
	Preservation of landscape diversity	R06-01	O
		R06-02	+
Architectural, archaeological and cultural Heritage			
	Conservation and protection of the assets of cultural heritage	R06-01	O
		R06-02	O
Overall environmental assessment			
		R06-01	**O**
		R06-02	**+**

4.3.3 Local Waste Management Components

4.3.3.1 Street Cleaning

4.3.3.1.1 Description of Technology

Principally there are two ways of street cleaning – either manually or mechanically.

Figure 20 Examples for manual street sweeping[44] (left) and mechanical street sweeping[45] (right)

The main disadvantages of mechanical sweeping are the high investment and operating costs. Considering the high unemployment rate in Albania, manual sweeping offers a possibility for job creation for unskilled persons. Therefore, mechanical sweeping should be applied only in necessary cases, e.g. if the safety of the manual sweepers cannot be ensured. In addition to sweeping equipment, litter bins, particularly in pedestrian and public areas, are important elements of street cleaning. They can be emptied by the manual sweepers or dedicated teams. Pickup trucks are used to transport the sweeping teams and equipment as well as to empty the litter bins.

4.3.3.1.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

The regular and effective street cleaning services ensure a clean and healthy living and working environment for the population. In addition to the contribution to the general cleanness of a city, street sweeping is an efficient measure to reduce pollutants in storm water runoff and consequently to protect the water quality. Some of the modern sweepers have PM10 certificate which means that they can pick up particles as small as 10 micrometres or less. Thus the air quality in a city is improved with street cleaning as well.

[44] https://worksitt.dk/haveredskaber/309-redskabsholder-til-affaldscontainer.html
[45] http://sweeper.buchermunicipal.com/en/products/compact_sweepers

It can be expected that the littering decreases if there is a regular street cleaning service as well as proper and sufficient litter bins. The disposal of household waste outside the dedicated areas or containers can be prevented as well.

The mechanical sweepers can achieve a higher cleaning level; however, they generate noise and carbon dioxide emissions. Due to the use of several raw materials, their environmental footprint is much bigger than the equipment used for manual cleaning of the streets.

Table 32 Environmental assessment for street cleaning

L01	**Street cleaning**
L01-01	Manual street sweeping
L01-02	Mechanical street sweeping

Environmental objective/ SEA target		**Abbreviation**	**Assessment**
Population and human health			
	Improvement of quality of life	L01-01	++
		L01-02	+
	Protection of human health	L01-01	++
		L01-02	O
Biodiversity, flora and fauna			
	Protection of natural and biological resources	L01-01	+
		L01-02	+
	Protection of protected areas and their natural resources	L01-01	+
		L01-02	+
Soils and land use as well as material assets			
	Preservation of healthy and ecological functions of soil	L01-01	+
		L01-02	+
	Reduction of the use of resources and improving the efficiency of such use	L01-01	++
		L01-02	+
	Responsible utilisation of natural resources	L01-01	++
		L01-02	O
Water			
	Protection of surface water as well as groundwater and improvement of its ecological status	L01-01	+
		L01-02	+
	Protection of surface water as well as ground water and improvement of its chemical status	L01-01	+
		L01-02	+
Air quality and climatic factors			
	Reduction and stabilization of greenhouse gas emissions	L01-01	++

Environmental objective/ SEA target		Abbreviation	Assessment
		L01-02	O
	Protection and improvement of air quality	L01-01	++
		L01-02	O
Landscape			
	Preservation of landscape diversity	L01-01	+
		L01-02	+
Architectural, archaeological and cultural Heritage			
	Conservation and protection of the assets of cultural heritage	L01-01	+
		L01-02	+
Overall environmental assessment			
		L01-01	**++**
		L01-02	**O**

4.3.3.2 Waste Collection (incl. Separate Collection)

4.3.3.2.1 Description of Technology

In general there are two options for the collection of waste – house-to-house collection (kerbside collection) and drop-off collection (bring system).

Figure 21 Examples for wheelie bins as used for house-to-house collection (left) and containers as used for drop-off in Maliq / Albania (right)[46]

Both systems can mostly be applied for the collection of all types of waste. From a technical point of view, the mixed household waste (or residual waste) can be collected

[46] INFRASTRUKTUR & UMWELT, Orhan Boran

with plastic bags or any type of container. Although there is some experience with the collection of paper and cardboard and glass in plastic bags, because of the volume and high density, it is a less suitable system for such kind of waste. For the separate collection of organic waste (particularly kitchen waste) the most suitable option is the collection with individual bins per waste generator (or certain groups of generators). For the separate collection of garden waste, drop-off points (mostly supervised) might be established. The wastes, which are generated irregularly and in small quantities, like WEEE or textiles, are usually collected in at collection points with bring systems.

4.3.3.2.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

Basically, waste collection has a positive impact on the environment. Life in urban areas without waste collection would not really be possible. Nevertheless, the different waste collection systems might also have more or less adverse impacts on the environment:

- Odour: the applied technology and the collection frequency shall be selected in a way so that there is no nuisance due to bad odour from the temporary storage inside the houses as well as in public areas. In case of separate collection of organic waste odour is an important issue, especially in summer months.
- Noise: in terms of noise generation the equipment used as well as the collection times are relevant factors. Collection during the night hours might be a good alternative with respect to the high traffic during the day. However, the impairment of the inhabitants caused by noise should be considered.
- Visual impact: large containers on the sidewalk (e.g. several depot containers for the collection of recyclables) or improper disposal of waste outside the collection containers, e.g. due to low collection frequencies, might have negative visual impact.
- Vermin and rodents: Low collection frequencies and improper collection containers might attract vermin and rodents around the collection points.

The separate collection of organic waste and recyclables contribute to the achievement of the legally set targets for environmental protection. Separate collection and subsequent composting and recycling activities contribute to the protection of natural resources and the reduction of negative environmental impacts of landfills.

Table 33 Environmental assessment for waste collection (incl. separate collection)

L02	Waste collection (incl. separate collection)
L02-01	Collection of mixed waste
L02-02	Collection of organic waste
L02-03	Collection of dry recyclables

Environmental objective/ SEA target		Abbreviation	Assessment
Population and human health			
	Improvement of quality of life	L02-01	++
		L02-02	+
		L02-03	O
	Protection of human health	L02-01	++
		L02-02	O
		L02-03	O
Biodiversity, flora and fauna			
	Protection of natural and biological resources	L02-01	+
		L02-02	+
		L02-03	+
	Protection of protected areas and their natural resources	L02-01	+
		L02-02	+
		L02-03	+
Soils and land use as well as material assets			
	Preservation of healthy and ecological functions of soil	L02-01	+
		L02-02	+
		L02-03	+
	Reduction of the use of resources and improving the efficiency of such use	L02-01	O
		L02-02	+
		L02-03	++
	Responsible utilisation of natural resources	L02-01	O
		L02-02	+
		L02-03	++
Water			
	Protection of surface water as well as groundwater and improvement of its ecological status	L02-01	++
		L02-02	++
		L02-03	++
	Protection of surface water as well as ground water and improvement of its chemical status	L02-01	+
		L02-02	+
		L02-03	+

Environmental objective/ SEA target		Abbreviation	Assessment
Air quality and climatic factors			
	Reduction and stabilization of greenhouse gas emissions	L02-01	+
		L02-02	++
		L02-03	++
	Protection and improvement of air quality	L02-01	+
		L02-02	+
		L02-03	++
Landscape			
	Preservation of landscape diversity	L02-01	+
		L02-02	+
		L02-03	+
Architectural, archaeological and cultural Heritage			
	Conservation and protection of the assets of cultural heritage	L02-01	+
		L02-02	+
		L02-03	+
Overall environmental assessment			
		L02-01	**+**
		L02-02	**+**
		L02-03	**++**

4.3.3.3 Composting (Material Recovery)

Basically, composting is an aerobic stabilization process of organic waste. The main target of this treatment option is to stabilise the waste and hence to reduce the amount of biodegradable municipal waste (BMW) going to landfill. Additional targets of composting are the reduction of the emissions from the disposed waste and the production and selling of a high-quality compost or soil conditioner (Material Recovery).

In Europe the production of compost from mixed household waste is a controversial subject. Poor quality composts from mixed waste produced in Germany in between 1950 and approx. 1980 created a bad reputation for such compost. As a consequence source separation of garden waste and organic kitchen was introduced from 1983 onwards. This achieved much better quality of compost and increased acceptance. Thus, separate collection of garden and green waste or organic kitchen waste is a basic requirement for this treatment technology.

Composting of organic waste from farming and gardening has a long tradition not only in Central Europe but also in Albania. However, there is no recent successful experience

with composting of municipal solid waste in Albania. Although Albanian regulations oblige municipalities to start separate collection in different fractions (dry recyclables, organic waste for composting and residual waste), so far there is very limited involvement of Albanian municipalities in composting.

In terms of segregation at source by households or businesses very few formal initiatives are outlined. But in the future, it is envisaged to separately collect organic municipal waste and to compost it, in order to meet the legal requirements. Therefore, pilot composting plants have already been initially planned within the following projects:

- Elaboration of a Feasibility Study for the Project Integrated Solid Waste Management System for the Region of Vlorë, Albania (funded by KfW)
- Consulting Services for Accompanying Measures for the Project Solid Waste Management South-East Albania (funded by KfW)
- Climate Friendly Integrated Waste and Recycling Management (GIZ Programme)

With a view to a sustainable, large-scale implementation of composting plants, it is recommended to first test the implementation and operation using pilot plants for garden and green waste.

4.3.3.3.1 Description of Technology

Composting is an aerobic stabilisation process of organic substances. There are numerous different composting technologies, from simple heap composting to fully automated in-house plants.

Figure 22 Example composting facility with forced aeration: delivered material, filling of aerated boxes, composting in the boxes, sieved compost[47]

The recommendable plant size (capacity) and the respective costs for aerobic stabilisation depend on the type of technology being used. Simple windrow composting without active aeration is the least cost solution already suitable for very small composting plants; costs for fully automated in-house systems are usually several times higher. Therefore, these systems are only recommendable from a certain plant size (> 10,000 Mg/a). The latter, however, have clear advantages with regard to space requirements and emission control. In contrast, open windrow composting is not recommendable for the treatment of kitchen and food waste. In order to avoid or to minimise emissions of odour and leachate as well as the infestation of flies, birds and rodents, covered or in-house solutions are to be preferred.

4.3.3.3.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

In general, composting is one technology option that contributes significantly to climate protection by reduction of bio-waste disposed at landfills and thus methane emissions from landfills. At the same time, the leachate generation in the landfills is reduced so that

[47] INFRASTRUKTUR & UMWELT, Orhan Boran

the risk of ground- or surface water pollution is minimised on the one side, and the costs for the leachate treatment are decreased on the other side. Further benefits are material recovery and thus preservation of resources.

In contrast, the biological process of composting plants can generate emissions to water and air. Depending on the legal requirements and on the base of the plant design the treatment technology for wastewater (leachate) and exhaust air must be selected. In this context the type of waste to be stabilised plays an important role. Compared to the treatment of kitchen and food waste, the emissions caused by the degradation of garden and green wastes during composting processes are negligibly low. In this case, costly exhaust air treatment processes, like bio-filter in combination with regenerative thermal oxidation (RTO), are not necessary to guaranty EU emissions standards.

Therefore, the assessment of environmental impacts of composting assumes, that especially for kitchen and food waste state of the art composting technologies are applied, which include capturing and treatment of exhaust air.

Table 34 Environmental assessment for composting (material recovery)

L03	**Composting (material recovery)**
L03-01	Windrow composting plant
L03-02	Fully automated in-house plant

Environmental objective/ SEA target		**Abbreviation**	**Assessment**
Population and human health			
	Improvement of quality of life	L03-01	O
		L03-02	O
	Protection of human health	L03-01	+
		L03-02	O
Biodiversity, flora and fauna			
	Protection of natural and biological resources	L03-01	+
		L03-02	+
	Protection of protected areas and their natural resources	L03-01	+
		L03-02	+
Soils and land use as well as material assets			
	Preservation of healthy and ecological functions of soil	L03-01	++
		L03-02	++
	Reduction of the use of resources and improving the efficiency of such use	L03-01	++
		L03-02	++
	Responsible utilisation of natural resources	L03-01	++

Environmental objective/ SEA target		Abbreviation	Assessment
		L03-02	++
Water			
	Protection of surface water as well as groundwater and improvement of its ecological status	L03-01	+
		L03-02	++
	Protection of surface water as well as ground water and improvement of its chemical status	L03-01	+
		L03-02	++
Air quality and climatic factors			
	Reduction and stabilization of greenhouse gas emissions	L03-01	+
		L03-02	++
	Protection and improvement of air quality	L03-01	+
		L03-02	++
Landscape			
	Preservation of landscape diversity	L03-01	O
		L03-02	O
Architectural, archaeological and cultural Heritage			
	Conservation and protection of the assets of cultural heritage	L03-01	O
		L03-02	O
Overall environmental assessment			
		L03-01	**+**
		L03-02	**++**

4.3.3.4 Inert Waste Management

4.3.3.4.1 Description of Technology

Inert waste is mainly generated during construction and demolition works. According to the Framework Directive 2008/98/EC on Waste, EU member states shall achieve that a minimum of 70 % of non-hazardous construction and demolition waste, excluding naturally occurring materials (soil and stones), shall be prepared for re-use, recycled or undergo other material recovery by 2020.

Comprehensive inert waste management includes on the one side measures to avoid the generation of inert waste and on the other side technology options for collection and transport, treatment as well as disposal of inert waste. The preparation of inert waste can be undertaken on-site with a mobile treatment plant or off-site at a central stationery treatment plant. In order to dispose the residuals or the entire inert waste stream (if recycling is not feasible) inert waste landfills are necessary.

Figure 23 Example of a mobile CDW treatment plant[48]

4.3.3.4.2 Potential Environmental Impacts and Possible Measures to Prevent or Reduce Negative Environmental Impacts

A great impact of proper inert waste management on the environment can be achieved with the re-use and recycling of construction and demolition waste. On the one side, natural resources are protected, while on the other side, the land required for the disposal of such waste is minimised. Furthermore, in Albania the land plots where inert waste is illegally disposed are shortly after converted to disposal sites for every kind of waste because of the wrong perception by the public.

Mobile as well as stationery treatment facilities generate mainly noise and dust emissions. If materials contaminated with hazardous substances are treated, there is a risk of pollution in surface and groundwater and in air.

Compared to stationery plants, the mobile treatment plants have the advantage that there is no need for the transport of raw CDW so that the costs as well as potential CO_2 emissions are avoided.

The landfills of inert waste have lower standards than the landfills for household waste. Consequently their operation is simpler and risks with the operation are lower. However, the stationery treatment plants as well as inert waste landfills are required to undergo a long permitting process including environmental impact assessment.

[48] INFRASTRUKTUR & UMWELT, Orhan Boran

Table 35 Environmental assessment for inert waste management

L04	Inert waste management
L04-01	Mobile treatment
L04-02	Stationery treatment
L04-03	Landfilling

Environmental objective/ SEA target		Abbreviation	Assessment
Population and human health			
	Improvement of quality of life	L04-01	+
		L04-02	+
		L04-03	O
	Protection of human health	L04-01	+
		L04-02	O
		L04-03	++
Biodiversity, flora and fauna			
	Protection of natural and biological resources	L04-01	+
		L04-02	+
		L04-03	++
	Protection of protected areas and their natural resources	L04-01	+
		L04-02	+
		L04-03	++
Soils and land use as well as material assets			
	Preservation of healthy and ecological functions of soil	L04-01	O
		L04-02	O
		L04-03	O
	Reduction of the use of resources and improving the efficiency of such use	L04-01	+
		L04-02	++
		L04-03	-
	Responsible utilisation of natural resources	L04-01	+
		L04-02	++
		L04-03	-
Water			
	Protection of surface water as well as groundwater and improvement of its ecological status	L04-01	+
		L04-02	+
		L04-03	+
	Protection of surface water as well as ground water and improvement of its chemical status	L04-01	O
		L04-02	O
		L04-03	O

Environmental objective/ SEA target		Abbreviation	Assessment
Air quality and climatic factors			
	Reduction and stabilization of greenhouse gas emissions	L04-01	-
		L04-02	O
		L04-03	O
	Protection and improvement of air quality	L04-01	-
		L04-02	O
		L04-03	O
Landscape			
	Preservation of landscape diversity	L04-01	O
		L04-02	O
		L04-03	O
Architectural, archaeological and cultural Heritage			
	Conservation and protection of the assets of cultural heritage	L04-01	O
		L04-02	O
		L04-03	O
Overall environmental assessment			
		L04-01	**+**
		L04-02	**++**
		L04-03	**O**

4.4 Summarised Overall Assessment of Environmental Impacts of the ISWM Investment Plan

Potential impacts resulting from implementation of the various measures foreseen for the ISWM Investment Plan have been assessed. The impacts and their significance are summarised in the following table.

Table 36 Summarised overall environmental assessment

Type of measure/ abbreviation	Description	Overall environmental assessment
WZ	**Delineation of Waste Zones**	**+**
R	**Regional waste management components**	
R01	**Waste transfer and long-distance transport**	
R01-01	Ramp type transfer station	+

Type of measure/ abbreviation	Description	Overall environmental assessment
R01-02	Ramp type transfer station with compaction	++
R02	**Mechanical treatment (MRF)**	
R02-01	Dirty MRF	+
R02-02	Clean MRF	++
R03	**Mechanical biological treatment (MBT)**	
R03-01	MBT with anaerobic digestions	++
R03-02	MBT with stabilisation	++
R03-03	MBT with composting	O
R04	**Anaerobic digestion**	**++**
R05	**Waste incineration (with energy recovery)**	
R05-01	Moving grate incineration	O
R06	**Sanitary landfill (safe waste disposal)**	
R06-01	Sanitary landfill	O
R06-02	Landfill rehabilitation	+
L	**Local waste management components**	
L01	**Street cleaning**	
L01-01	Manual street sweeping	++
L01-02	Mechanical street sweeping	+
L02	**Waste collection (incl. separate collection)**	
L02-01	Collection of mixed waste	+
L02-02	Collection of organic waste	+
L02-03	Collection of dry recyclables	++
L03	**Composting (material recovery)**	
L03-01	Windrow composting plant	+
L03-02	Fully automated in-house plant	++
L04	**Inert waste management**	
L04-01	Mobile treatment	+
L04-02	Stationery treatment	++
L04-03	Landfilling	O

As shown in the table above, the measures of the ISWM Investment Plan have a positive or non-significant impact on the majority of subjects of protection of the SEA.

Two important measures, which have not received a generally positive assessment, are briefly described below in more detail, while at the same time other aspects to minimise risks and/ or improve the existing situation are highlighted:

- Moving grate incineration:
  - Internal and external monitoring and control of emissions are imperative for a save and environmental sound operation. They require appropriately organised monitoring processes and qualified personnel.
  - In order to control emissions and to achieve emission standards that do not endanger public health or the environment, complex technical systems, e.g. for flue gas treatment, must be installed. Their operation and maintenance is costly.
  - Residues remaining after incineration are problematic and require safe post-treatment, such as disposal of solid residues in hazardous waste landfills or treatment of polluted waste water (if wet flue gas cleaning is done). The respective technical infrastructure must not only be implemented and maintained but the cost must also be added to the incinerations costs.
  - Considering the waste hierarchy, material recovery is to be preferred to thermal recovery. However, with a simultaneous separation of recyclables (either at source or in a sorting plant), the calorific value of the waste to be incinerated decreases and may necessitate usage of auxiliary fuel. This way, meaningful resource protection cannot be ensured.
  - Metals that can be filtered out of the ashes after combustion are of lower quality for recycling purposed than otherwise separated metals.
- Sanitary landfill:
  - In order to ensure that the lowest possible emissions from a sanitary landfill are achieved and the specified standards are met, respective requirements are to be fulfilled both during construction and during operation. This requires appropriately qualified personnel.
  - Until now, the main part of MSW is disposed on dumpsites or uncontrolled landfills without efficient measures for health and environmental protection. A country wide realisation of sanitary landfill standards will take many years. Thus, besides realising new regional sanitary landfills, in parallel the situation of the existing landfills and dumpsites should be improved, by converting dumpsites into controlled (intermediate) landfills.[49] These measures can be

[49] Main requirements for converting a dump site into a controlled (intermediate) landfill include: availability of permanent staff and equipment; registration and control of incoming waste; planned waste disposal in cells as well as compaction and coverage of the disposed waste; slope stability; surface water and leachate management; health and security measures and instructions; prevention of landfill fires; fencing as well as litter and dust control.

implemented on selected (larger) existing dumpsites/ landfills, in order to concentrate disposal on few larger landfills with improved/ controlled operation. Simultaneously, smaller dumpsites should be closed and rehabilitated as far as possible.

- Based on the waste management hierarchy, waste avoidance, re-use and recycling have priority over waste treatment and disposal. Thus, in the long-term a sanitary landfill will continue to be an important element of integrated SWM. But disposal of collected will not be considered as final solution. Instead, the integrated SWM system will consist of various elements/ components that enable the reuse/ recycling before disposal of residual waste.

As can be seen from the above, the measures should not only be assessed individually but also with regard to their interaction in an integrated SWM system.

The site selection plays an important role especially in the implementation of regional waste management components. A detailed site selection must therefore be carried out as part of the subordinate planning and approval procedures.

5 Monitoring

The responsible authority, i.e. the MoIE, has to monitor the significant environmental impacts of implementing the ISWM Investment Plan. This is to identify unforeseen adverse effects at an early stage and to enable appropriate remedial actions. The monitoring measures are to be presented in the environmental report.

All information on the environmental status is Albania is managed by the National Environmental Agency (NEA). Every year the State of Environment Report (SoER) is published containing information on all the components of the environment. The national monitoring networks concerning the environment are management by various institutions and bodies, which monitor and measures specific parameters:

- Agricultural University of Tiranë: Soil, forestry
- Institute of Public Health: human health, water, air quality
- LGUs: Waste
- National Agency of the Protected Areas: biodiversity, flora and fauna
- National Service of Geology: groundwater
- Polytechnic University of Tiranë, Institute of Geosciences, Energy, Water and Environment: Surface water, climate

- University of Tiranë, Faculty of Natural Sciences: biodiversity
- University of Tiranë, Institute for Applied Nuclear Physics: Noise

Using the monitoring networks described above, the environmental impact can generally be determined. Additional need for monitoring measures can arise in particular when implementing individual measures. The respective monitoring measures to be taken are then to be defined in the corresponding subordinate planning and approval procedures.

Monitoring the environmental impact of the ISWM Investment Plan is also ensured by the regular review/ update of the ISWM Investment Plan. It is intended that the ISWM Investment Plan will be updated annually. This is an ongoing process that allows the plan be adapted to changing circumstances.

6 Next Steps

The following table lists future steps and milestones and the dates when these are expected to be completed.

It is the MoIE's responsibility to take the necessary steps for

- Publishing the Draft SEA Study,
- Public Hearing and
- Compiling the comments received to the SEA Study

The Consultant assumes that a single set of consolidated written comments will be provided on the Draft SEA Study. On this basis he will prepare the revised final SEA Study.

Table 37 Anticipated ISWM Investment Plan-making and SEA milestones

Task	4 Sep				5 Oct				6 Nov					7 Dez			
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Main Contract	■	■	■	■	■	■	■	■	■								
Completion and submission of Draft Sector Study																	
Workshop																	
Revision and comments on Draft Sector Study																	
Official deadline for comments on Draft Sector Study																	
Revision and submission of Final Sector Study*																	
Distribution of Draft Sector Study to all 61 municipalities and other stakeholders by MoIE, incl. request for comments																	
Workshop to discuss the consideration of comments received from different Albanian stakeholders in a final version of the Final Sector Study							▒										
Submission of the final version of the Sector Study*								▒	▒	▒	■						
Strategic Environmental Assessment	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Preparatory works for SEA																	
NGO-Meeting																	
Timeframe for comments from NGOs																	
Preparation and submission of Draft Scoping Report*																	
Revision and comments on Draft Sector Study	■																
Scoping Meeting with MoIE and MoTE			▒														
Preparation and submission of Final Scoping Report*			▒	■													
Environmental Assessment of Sector Study	▒	▒	▒	▒	▒	▒	▒	▒									
Submission of Draft SEA Report*									■								
Publishing of the Draft SEA Study (min. 30 days, according to DCM N°2019)										▒	▒	▒	▒	▒			
Public Hearing (according to DCM N°2019)														▒			
Commenting period for public (15 days, according to DCM N°2019)														▒	▒	▒	
Comments on Draft SEA Study																■	
Preparation and submission of Final SEA Report*																	■

* Due to the necessary translation work, the Albanian version will be delivered later than the English version.

Activities of Consultant:
■ Main activity period ▒ Subsidiary activity period
■ Submission of deliverables

Activities of MoIE:
▒ Activity ■ Transfer of information to the Consultant

7 Annexes

7.1 Annex 1: Executive Summary of the "Sector Study for Investment Demand in Integrated SWM in Albania"

0 Executive Summary

I Introduction

KfW Entwicklungsbank supports the Government of Albania in its efforts to improve the waste management situation in the country. Among others it has been agreed upon to prepare a Sector Study for Investment Demand in Integrated Solid Waste Management (ISWM) in Albania. The Albanian Project Partner is the Ministry of Infrastructure and Energy (MoIE).

In recent years, considerable progress has been achieved in Albania regarding the development of the regulatory framework in accordance with European Union (EU) policies in the waste management sector. Implementation at the regional or local level and achievement of the agreed targets, however, is still lagging behind. The crucial point between planning and implementation is the financial aspect. Thus, the specific objectives of the Sector Study are:

- to determine the proper methodology and technology for future investments in the SWM sector,
- to determine the proper costs and estimate future tariffs,
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments,
- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/ or disposal facilities,
- to propose necessary legal and institutional changes,
- to propose any other accompanying measures.

The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

II Existing Solid Waste Management Situation

Considerable improvement has been made in recent years with regard to developing the regulatory framework. Furthermore, waste collection coverage has been expanded and initial steps for formal recycling and improvement of waste disposal have been taken.

Nevertheless, the overall progress is slow and in general the requirements set by the policy and legal framework are not met. Key obstacles and shortages in the SWM sector include:

- Unclear or non-functional division of responsibilities at national level,
- Unclear or non-functional organisation of “regional” waste management services,
- Present policies, plans and regulations not (yet) being implemented,
- Insufficient human and institutional capacities,
- Disposal of waste in poorly managed landfills and dumpsites,
- Insufficient financing of advanced waste management services,
- Lack of public awareness and enforcement.

The most important success factor for improvement of waste management in Albania will be the sustainable financing of services. Currently, there are already various initiatives in place to address this issue, including

- Definition of requirements for cost calculation and tariff setting,
- Clarification of priorities and criteria for SWM investments,
- Broadening of the revenue basis, e.g. through the implementation of Extended Producer Responsibility (EPR) schemes.

III Technology Options for SWM

A set of policy conform, empirical proven and financially feasible technology options is briefly described as well as compared by means of the respective institutional requirements, technical criteria, social-economic importance, environmental impacts and financial characteristics. With respect to the importance of the financial feasibility, a summary of key specifications of SWM components is compiled in the following table.

As no long-term experience is available for the costs of waste treatment in Albania, the respective costs have been taken from the EU reference data base.

Summary of Key Specifications of SWM Components

SWM Component	Minimum Throughput	Waste Types	Specific Invest	Specific Net Costs ** including revenues		Economy of Scale	Remarks
				related to the annual troughput	converted for a reference system with 50,000 t/a collected waste		
Street Cleaning							
Manual street sweeping	Flexible	Mixed municipal waste	6.6 EUR/t (50,000 t/a)	10.5 EUR/t	10.5 EUR/t	low	Specific costs related to collected waste amount of 50,000 t/a
Mechanical street sweeping	Flexible*	Mixed municipal waste	17.3 EUR/t (50,000 t/a)	11.3 EUR/t	11.3 EUR/t	low	Specific costs related to collected waste amount of 50,000 t/a
Waste Collection							
Collection of mixed waste	Flexible*	Mixed municipal waste	44 EUR/t (25,000 t/a)	17.2 EUR/t	8.6 EUR/t	medium	Based on the calculations for Korca Region
Collection of organic waste	Flexible*	Organic waste	36 EUR/t (15,000 t/a)	18.7 EUR/t	5.6 EUR/t	medium	Based on the calculations for Korca Region
Collection of dry recyclables	Flexible*	Dry Recyclable materials	116 EUR/t (10,000 t/a)	35.4 EUR/t	7.1 EUR/t	medium	Based on the calculations for Korca Region
Waste Transfer and Transport							
Ramp type transfer station	Flexible*	Mixed municipal waste	17.2 EUR/t (50,000 t/a)	7.6 EUR/t	7.6 EUR/t	medium	For an average transport distance of 50 km
Ramp type TS with compaction	Flexible*	Mixed municipal waste	18.8 EUR/t (50,000 t/a)	7.2 EUR/t	7.2 EUR/t	medium	Minimal savings versus risk of breakdown, for an average transport distance of 50 km
Material Recovery Facility (MRF)							
Dirty MRF	Flexible*	Mixed municipal waste	100 EUR/t (50,000 t/a)	8 EUR/t**	8 EUR/t**	medium	Quality of recyclables is low compared to clean MRF
Clean MRF	Flexible*	Separately collected dry recyclables	80 EUR/t (10,000 t/a)	25 EUR/t**	5 EUR/t**	medium	Without costs of separate collection
Mechanical Biological Treatment (MBT)							
MBT with AD	> 10,000 t/a	Mixed municipal waste	291 EUR/t (50,000 t/a)	73 EUR/t**	73 EUR/t**	high	High requirements for the anaerobic treatment of mixed municipal waste
MBT with biological drying (RDF)	> 25,000 t/a	Mixed municipal waste	252 EUR/t (50,000 t/a)	58 EUR/t**	58 EUR/t**	high	The existing plants in Germany have an average throughput of 150,000 t/a
MBT with composting	> 10,000 t/a	Mixed municipal waste	194 EUR/t (50,000 t/a)	52 EUR/t**	52 EUR/t**	medium	High area demand
Composting (Material Recovery)							
Windrow composting	Flexible*	Separately collected organic waste	140 EUR/t (5,000 t/a)	20 EUR/t	2 EUR/t	low	Treatment of food waste causes higher technical requirements.
Fully automated in-house plant	> 10,000 t/a	Separately collected organic waste	200 EUR/t (25,000 t/a)	50 EUR/t	25 EUR/t	high	Based on the Concept Report and Feasibility Study for Kakheti Region, Georgia
Anaerobic Digestion (Energy Recovery)							
Anaerobic Digestion (AD)	Flexible*	Separately collected organic waste	170 EUR/t (25,000 t/a)	50 EUR/t**	25 EUR/t**	medium	Based on the calculations for the Feasibility Study for Kakheti Region, Georgia
Waste Incineration (Energy Recovery)							
Moving grate incineration	> 50,000 t/a	Mixed municipal waste	638 EUR/t (100,000 t/a)	123 EUR/t**	n.a.	very high	Incineration plant with a simple flue gas treatment and combined heat and power (CHP) utilisation
Sanitary Landfill (Safe Waste Disposal)							
Sanitary Landfill	> 30,000 t/a	Mixed municipal waste	115 EUR/t (50,000 t/a)	24.7 EUR/t	24.7 EUR/t	high	Due to the economy of scale the minimum size of sanitary landfills should be 100 t/d
Landfill rehabilitation	Flexible*	Mixed municipal waste	95.2 EUR/t (39,000 t/a)	95.2 EUR/t	122 EUR/t	low	Average costs based on the dumpsite rehabilitation concept for the Korca region
Inert Waste Management							
Mobile Treatment	> 30,000 t/a	Inert construction and demolition waste	10 EUR/t (50,000 t/a)	5.4 EUR/t**	5.4 EUR/t**	medium	The specific costs without consideration of risk & profit for private operator
Stationery Treatment	> 100,000 t/a	Inert construction and demolition waste	19 EUR/t (100,000 t/a)	4.3 EUR/t**	8.6 EUR/t**	very high	Risk & profit and transport costs for deliver to the plant are not considered in the specific costs
Landfilling	> 2,000 t/a	Inert waste	26 EUR/t (50,000 t/a)	6.0 EUR/t	6.0 EUR/t	medium	The cost calculation is based on the standards of a LC I landifll.

IV Inter-municipal Cooperation for Advanced Waste Management

Definition of Regional Waste Management Activities and Identification of Waste Zones

According to the Albanian legislation the municipalities are responsible for provision of waste management services. Nevertheless, certain elements of an integrated waste management system require large scale solutions for cost effective operations. Because most municipalities in Albania are too small for efficient operation of large scale facilities, cooperation among municipalities respectively a so-called “regionalisation” or zoning is required.

Large scale facilities serving two or more municipalities are called “regional”, although the waste zone (catchment area) of the respective facility might differ from the regional boundaries.

A prerequisite for site identification of regional waste management facilities is the definition of the respective waste zones. In order to define these waste zones, it is important to clarify in a first step, which SWM component/ facility is

- **Regional:** catchment area/ service area preferably more than one municipality
- **Local:** catchment area/ service area usually only one municipality or even only parts of a municipality

The following components will be considered as “regional”:

- Transfer and long-distance transport (in large volume vehicles) after transfer
- Treatment of residual waste (including Mechanical Biological Treatment and Incineration)
- Disposal on sanitary landfills

Other components might be included in the scope of the regional activities based on an analysis of the actual frame conditions. In any case, the private sector can be involved in the different activities.

Transfer Stations for Cost Efficient Long Distance Transport

With the realisation of regional waste management facilities, the transportation distances from the source of waste generation to the future treatment and disposal sites will be extended. Whereas, currently, in Albania it is still common practise that the waste collected in a municipality is disposed on a nearby landfill (dumpsite), in the future the

collected waste might have to be transported to a regional waste management facility in a distance of 50 or even 100 km. As mentioned earlier, the financial advantages of large scale waste treatment facilities [generated in larger catchment areas (waste zones)] have to be balanced with the additional costs for long-distance transportation, which usually is the subject of detailed concept and feasibility studies.

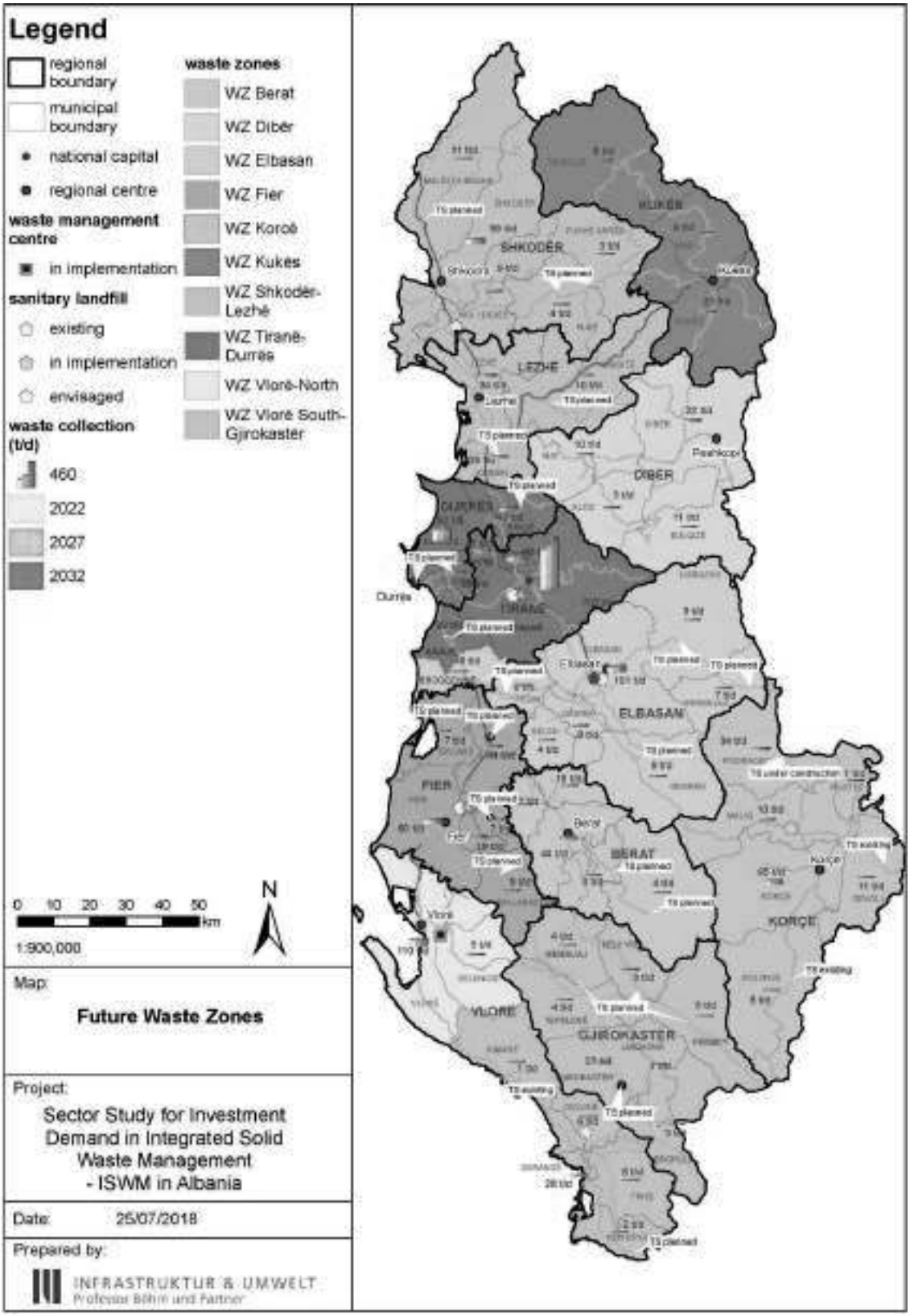
For the purpose of this investment plan a transportation distance of more than 30 km is used as a benchmark to indicate the need for a transfer station. Thus, the investment plan indicates where transfer stations are needed and presents the respective investment costs. The exact locations of the transfer stations should be identified in the scope of detailed waste management planning (e.g. local waste management plans or concept and feasibility studies for SWM projects) or municipal planning (e.g. local development plans).

Waste Zones for Inter-municipal Cooperation

For the whole of Albania, waste zones are defined so that all municipalities are assigned to a specific (existing or planned) regional waste management facility. For defining the waste zones (catchment areas) the existing and planned modern waste disposal facilities including their catchment areas are identified first. Then, the remaining areas are divided into waste zones; these waste zones might deviate from the qark boundaries i.e. because of:

- economic aspects (waste amounts and economy of scale),
- logistics (distances and road conditions, waste amounts to be transported).

All waste zones, both the existing and the new ones, are displayed in the overview map below.



Map of waste zones and regional waste management facilities

Sustainable Operation of Regional Waste Management Facilities

According to the Albanian legislation the municipalities are responsible for provision of waste management services. Law No. 139/2015 on Local Self-Government defines the functions of the municipalities and also describes the ways, how local services should be managed. Local self-government units shall ensure the delivery of public services through one or more of the following instruments:

- Their own organizational units
- Enterprises for public services
- Conclusion of contracts with third parties
- Use of appropriate instruments of public and private partnerships

Chapter V of the Law No. 139/2015 on Local Self-Government addresses the cooperation among municipalities. In Article 14, No. 5 it is specified that:

„*Two or more local self-government units within a region or from different regions may conclude agreements among themselves or with the central government institutions for the creation of a juridical person separated from the parties to whom they grant authority and specific powers. In the meaning of this Law, such juridical person shall be called Joint Powers Authority."*

This "Joint Powers Authority" could for example be established as a shareholder company, such as the Korca Regional Waste Management Company. Besides the municipalities, the law also makes provision for "Central Government Institutions" to join in. For the management of services the Joint Powers Authority could also engage private sector companies or establish PPPs.

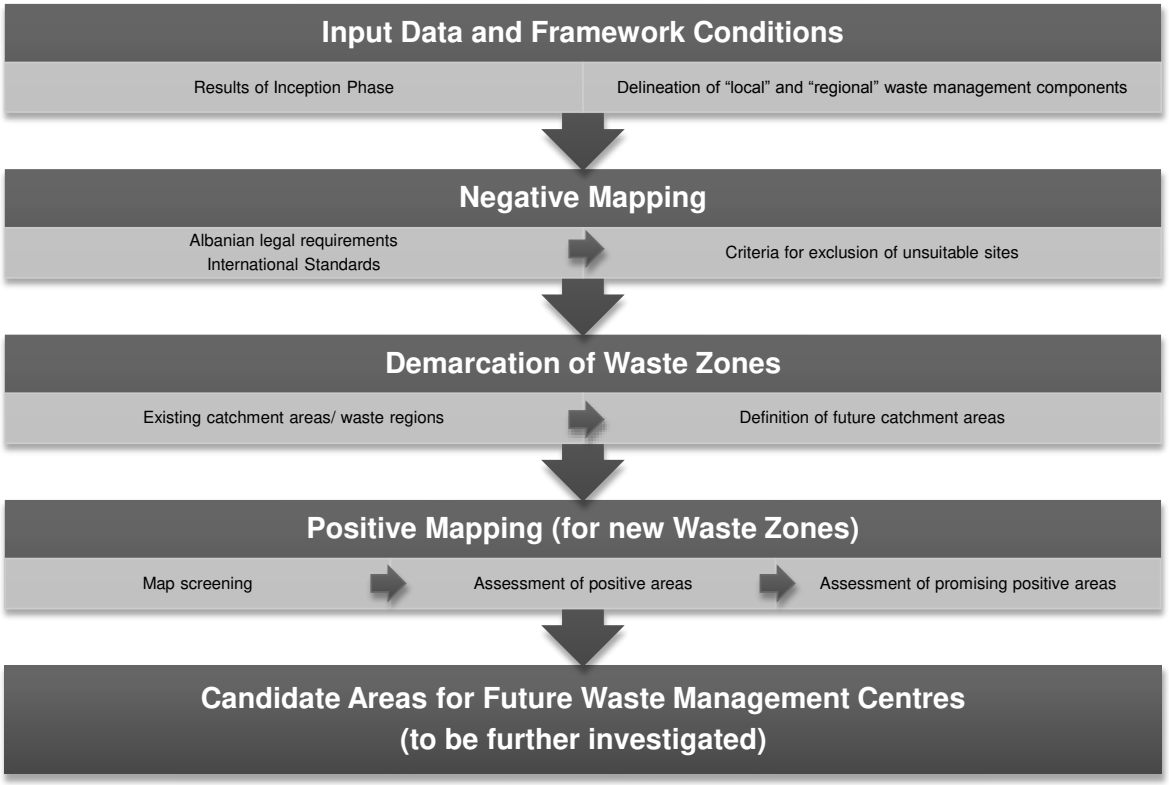
Summarizing, Law No. 139/2015 provides a frame to establish enterprises, where besides the municipalities of the respective waste zone also other partners, such as central government institutions or private companies could be included. As the current experience in Korçë shows, the establishment of such a regional company is quite challenging and time consuming.

Another solution, which complies with the stipulations of Law No. 139/2015, would be that one municipality takes over the responsibility for the regional facilities and concludes bilateral contracts with other municipalities in the waste zone. The weakness of this model is that one municipality has to be willing and able to take over the full risk of the regional facility. Therefore, this model is considered only valuable in exceptional cases.

V GIS Mapping and Identification of Locations for Regional Waste Management Facilities

Potential locations for sanitary landfills and other waste treatment facilities were identified for waste zones without an agreed location for such facility. The working steps conducted for site identification are shown in the figure below.

Working steps for identification of locations for Regional Waste Management Centres



For the purpose of the site identification a GIS data base has been prepared covering all of Albania. In the negative mapping, based on the requirements set by the legislation and standards, criteria for the exclusion of unsuitable areas were compiled.

In the remaining (not excluded) areas a positive mapping was carried out to identify suitable areas for the implementation of a regional waste management centre. The results of this exercise are candidate areas for the future waste management centres as well as aspects to be considered in further investigations required for final site selection for a potential investment project. These data and information are also available as GIS layer and data base.

VI Investment Planning

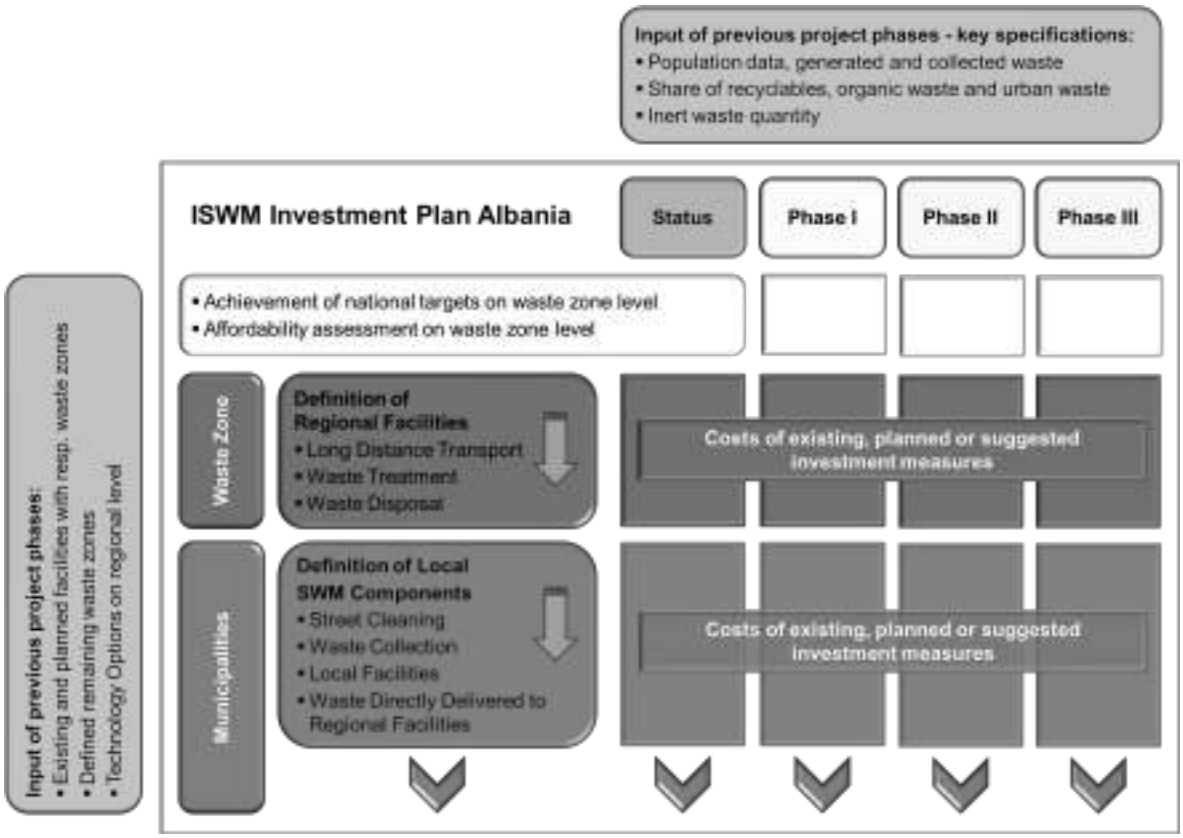
The Integrated Solid Waste Management – Investment Planning Tool (ISWM-IPT)

The core element of the investment planning is the Integrated Solid Waste Management – Investment Planning Tool (ISWM-IPT); the future investments on the regional and local level are considered by applying this interactive tool.

The planning horizon is divided into three phases: Phase 1: 2018 - 2022, Phase 2: 2023 - 2027, Phase 3: 2028 - 2032.

The following figure illustrates the basic scheme of the ISWM-IPT Albania.

Basic scheme of the ISWM Investment Planning Tool



Investment Plan

The following table presents the summary of the planned new regional facilities which shall be implemented in the three phases.

	Regional Facilities/ Waste Zones	WZ Berat	WZ Dibër	WZ Fier	WZ Elbasan	WZ Korçë	WZ Kukës	WZ Shkodër-Lezhë	WZ Tirane-Durrës	WZ Vlorë North	WZ Vlorë South-Gjirokastër	Total
Phase 1 (2018 - 2022)	Long Distance Transport											
	Ramp type transfer station	400,000		800,000	800,000			800,000	1,594,000		600,000	**4,994,000**
	Ramp type TS with compaction											
	Waste Treatment											
	Dirty MRF								1,650,000	4,200,000		**5,850,000**
	MBT with AD											
	MBT with biological drying (RDF)											
	MBT with composting											
	Anaerobic Digestion (AD)											
	Moving grate incineration			25,512,000					76,001,000			**101,513,000**
	Waste Disposal											
	Controlled Landfill		1,000,000				750,000					**1,750,000**
	Sanitary Landfill	3,673,000		3,000,000				3,467,000	22,585,000	6,800,000	2,283,000	**41,808,000**
	Total Phase 1 (2018 - 2022)	**4,073,000**	**1,000,000**	**29,312,000**	**800,000**		**750,000**	**4,267,000**	**101,830,000**	**11,000,000**	**2,883,000**	**155,915,000**
Phase 2 (2023 - 2027)	Long Distance Transport											
	Ramp type transfer station											
	Ramp type TS with compaction											
	Waste Treatment											
	Dirty MRF											
	MBT with AD											
	MBT with biological drying (RDF)					11,100,000		14,848,000				**25,948,000**
	MBT with composting	5,067,000								7,373,000	6,207,000	**18,647,000**
	Anaerobic Digestion (AD)											
	Moving grate incineration											
	Waste Disposal											
	Controlled Landfill											
	Sanitary Landfill			4,567,000	4,342,000	3,377,000		5,479,000			2,509,000	**20,274,000**
	Total Phase 2 (2023 - 2027)	**5,067,000**		**4,567,000**	**4,342,000**	**14,477,000**		**20,327,000**		**7,373,000**	**8,716,000**	**64,869,000**
Phase 3 (2028 - 2032)	Long Distance Transport											
	Ramp type transfer station											
	Ramp type TS with compaction											
	Waste Treatment											
	Dirty MRF											
	MBT with AD											
	MBT with biological drying (RDF)											
	MBT with composting											
	Anaerobic Digestion (AD)											
	Moving grate incineration											
	Waste Disposal											
	Controlled Landfill		421,000				288,000					**709,000**
	Sanitary Landfill	2,131,000		4,968,000	4,732,000	3,577,000		5,873,000		3,456,000	2,727,000	**27,464,000**
	Total Phase 3 (2028 - 2032)	**2,131,000**	**421,000**	**4,968,000**	**4,732,000**	**3,577,000**	**288,000**	**5,873,000**		**3,456,000**	**2,727,000**	**28,173,000**

Summary of the estimated investment costs for new regional facilities per waste zone and planning phase [EUR]

In the next table, the estimated investment costs (for local and regional investments) are shown for each waste zone, and for the country wide initiative for dumpsite risk mitigation.

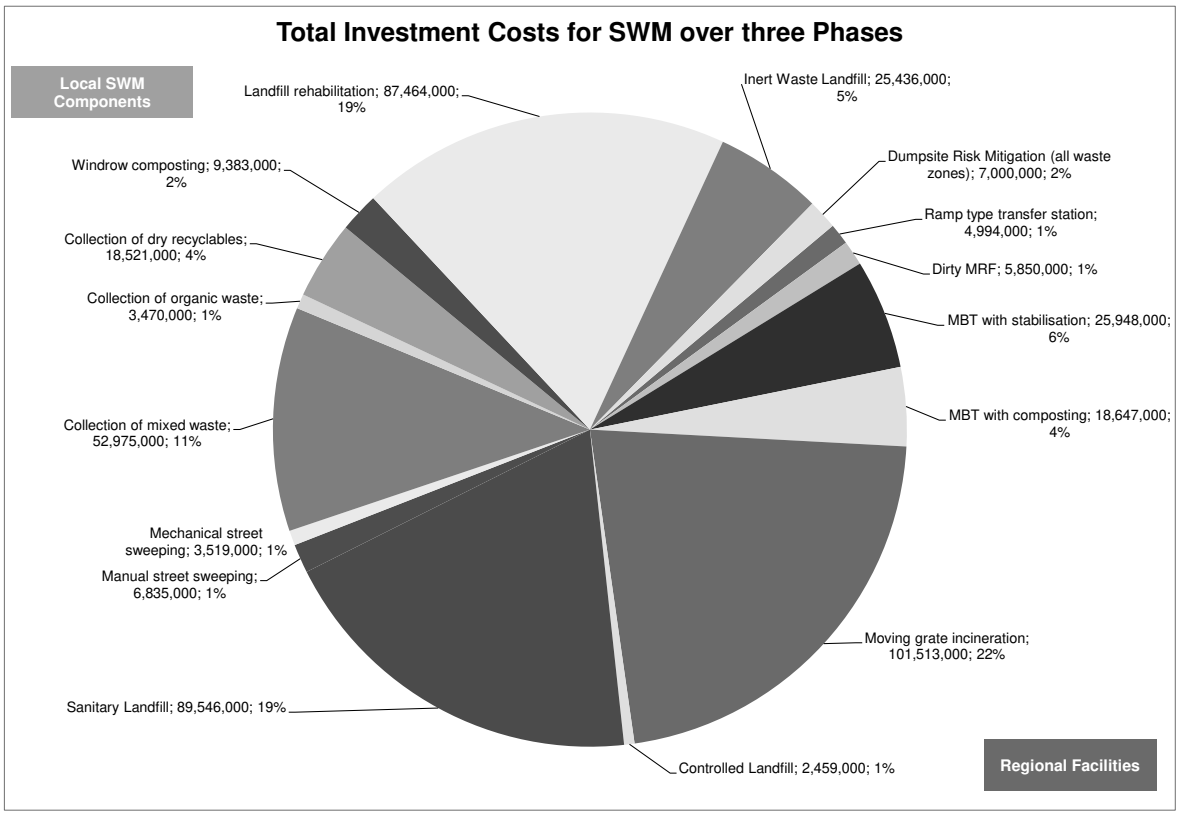
Summary of the estimated investment costs per waste zone and planning phase [EUR]

Waste Zone	Phase 1	Phase 2	Phase 3	Total
WZ Berat	5,497,000	7,608,000	6,871,000	**19,976,000**
Regional investment costs	*4,073,000*	*5,067,000*	*2,131,000*	*11,271,000*
Local investment costs	*1,424,000*	*2,541,000*	*4,740,000*	*8,705,000*
WZ Dibër	1,773,000	3,012,000	1,910,000	**6,695,000**
Regional investment costs	*1,000,000*		*421,000*	*1,421,000*
Local investment costs	*773,000*	*3,012,000*	*1,489,000*	*5,274,000*
WZ Fier	32,303,000	8,933,000	15,128,000	**56,364,000**
Regional investment costs	*29,312,000*	*4,567,000*	*4,968,000*	*38,847,000*
Local investment costs	*2,991,000*	*4,366,000*	*10,160,000*	*17,517,000*
WZ Elbasan	3,587,000	6,698,000	10,730,000	**21,015,000**
Regional investment costs	*800,000*	*4,342,000*	*4,732,000*	*9,874,000*
Local investment costs	*2,787,000*	*2,356,000*	*5,998,000*	*11,141,000*
WZ Korçë	4,923,000	20,500,000	6,870,000	**32,293,000**
Regional investment costs		*14,477,000*	*3,577,000*	*18,054,000*
Local investment costs	*4,923,000*	*6,023,000*	*3,293,000*	*14,239,000*
WZ Kukës	1,354,000	2,081,000	1,334,000	**4,769,000**
Regional investment costs	*750,000*		*288,000*	*1,038,000*
Local investment costs	*604,000*	*2,081,000*	*1,046,000*	*3,731,000*
WZ Shkodër-Lezhë	9,890,400	27,674,000	16,413,000	**53,977,400**
Regional investment costs	*4,266,400*	*20,327,000*	*5,873,000*	*30,466,400*
Local investment costs	*5,624,000*	*7,347,000*	*10,540,000*	*23,511,000*
WZ Tirane-Durrës	140,622,900	25,101,000	35,153,000	**200,876,900**
Regional investment costs	*101,829,900*			*101,829,900*
Local investment costs	*38,793,000*	*25,101,000*	*35,153,000*	*99,047,000*
WZ Vlorë North	16,200,000	12,101,000	6,966,000	**35,267,000**
Regional investment costs	*11,000,000*	*7,373,000*	*3,456,000*	*21,829,000*
Local investment costs	*5,200,000*	*4,728,000*	*3,510,000*	*13,438,000*
WZ Vlorë South-Gjirokastër	5,232,400	13,047,000	7,046,000	**25,325,400**
Regional investment costs	*2,882,400*	*8,716,000*	*2,727,000*	*14,325,400*
Local investment costs	*2,350,000*	*4,331,000*	*4,319,000*	*11,000,000*
Dumpsite Risk Mitigation (all waste zones)	7,000,000			**7,000,000**
Albania	228,383,000	126,755,000	108,421,000	**463,559,000**
Regional investment costs	*162,914,000*	*64,869,000*	*28,173,000*	***255,956,000***
Local investment costs	*65,469,000*	*61,886,000*	*80,248,000*	***207,603,000***

In the Waste Zone Tirane-Durrës as well as in the Waste Zone Fier, the investment costs of the regional facilities as well as part of the costs of the landfill rehabilitation within the local investment costs will be covered by a private investor in the framework of concession contracts.

The total investment requirements until the end of the planning horizon (2032) will be about 256 Mio EUR for regional investments and 208 million EUR for local investments. Consequently for the entire country in total 463 million EUR will be required for the investments in the SWM sector until end of 2032. At the local level, the municipalities will have to cover a considerable amount of investment costs for the extension of collection services, implementation of separate collection and inert waste management, and especially for the closure and rehabilitation of existing dumpsites.

The following figure summarises the total regional and local investment costs until 2032 and shows the percentage of investment costs for each component of the ISWM system in total costs.



Share and value of investment costs for each ISWM component [EUR]

The orange colours indicate the investments for local SWM components, while the

investment costs shown in blue colours are related to the regional facilities.

The annual average operating costs in the three planning phases of the regional facilities and local components are presented in the following table.

Total annual operating costs of the regional facilities and local components [EUR/a][1]

Total operating costs	Currency EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	1,099,000	1,116,000	1,179,000
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF	-67,000		
MBT with AD			
MBT with biological drying (RDF)		3,848,000	3,557,000
MBT with composting		3,462,000	3,163,000
Anaerobic Digestion (AD)			
Moving grate incineration	11,657,000	13,306,000	15,147,000
Waste Disposal			
Controlled Landfill	155,000	137,000	128,000
Sanitary Landfill	1,677,000	715,000	693,000
Total Operating Costs for Regional Facilities	**14,521,000**	**22,584,000**	**23,867,000**

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	4,985,600	5,647,400	6,377,600
Mechanical street sweeping	524,000	870,100	1,285,900
Waste Collection			
Collection of mixed waste	7,818,700	7,979,100	8,485,700
Collection of organic waste	75,100	579,400	945,300
Collection of dry recyclables	566,200	1,163,100	1,451,300
Local Facilities			
Clean MRF			
Windrow composting	31,300	247,500	402,200
Fully automated in-house composting plant			
Landfill rehabilitation	130,000	107,800	197,400
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	712,700	1,060,000	1,465,500
Total Operating Costs for Local SWM Components	**14,844,000**	**17,655,000**	**20,611,000**

Grand Total Operating Costs	**29,365,000**	**40,239,000**	**44,478,000**

[1] The operating costs of the incineration only include the costs in Tiranë which are based on the gate fee. The incineration costs in Elbasan and Fier in Phase 1 are considered as zero, while the costs in Phase 2 and 3 are not known. Thus the total operating costs for regional costs in Phase 2 and 3 are without potential operating costs for incinerators in Elbasan and Fier.

The operating costs of the regional facilities will considerably increase with the implementation of new waste treatment facilities. Further increases in operating costs are expected in Phase 3 due to increased waste quantities to be treated and disposed. The operating costs of the incineration plants in Elbasan and Fier are currently not known so that the total operating costs for all regional facilities cannot be estimated.

With regard to local SWM components, the increases in operating costs are related to the increased waste quantities to be handled over the years as well as the strengthening of separate collection and resource recovery.

At regional and local level, an average of about 29 million EUR should annually be spent during phase 1 to cover the operating costs of the ISWM system. Towards the end of the planning horizon, these costs will increase to approx. 44 million EUR per annum.

Up-dating of the Investment Plan

Taking into account that SWM is a rapidly developing sector in Albania, the ISWM Investment Plan can be seen as a living document. Therefore, the proposed measures and other developments in the SWM sector shall be monitored to regularly update the plan. The Investment Plan can be actualised at any time if changes in the SWM sector are known. However, a review should be done at least once a year, preferably timely before the budget decision for the next financial year.

VII Tariff Implications and Affordability

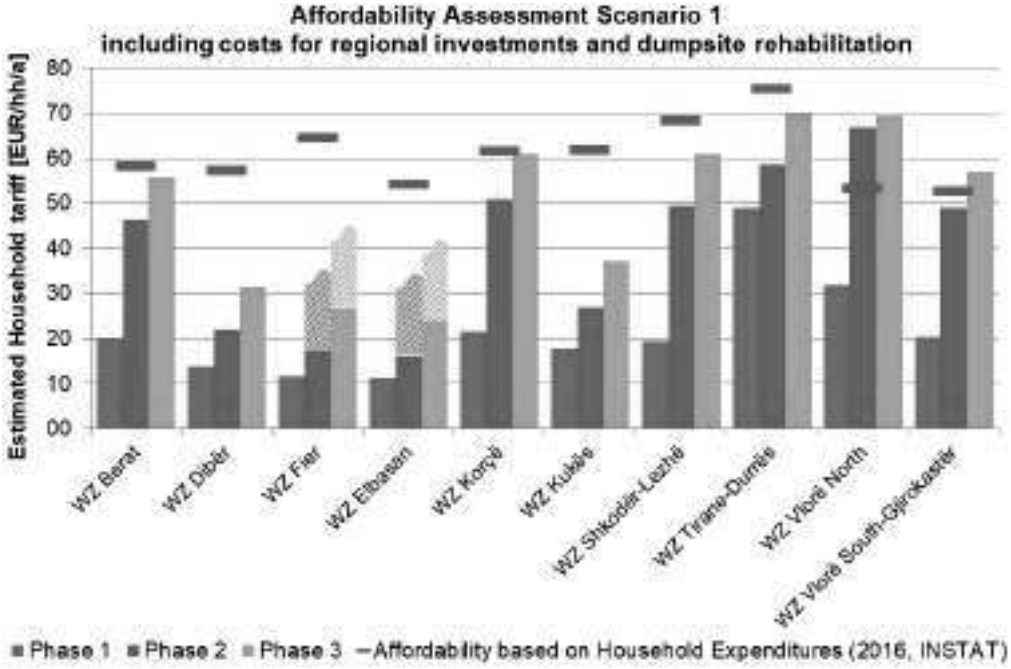
The potential tariffs for households are calculated for the local and regional waste management activities presented in the previous chapters, based on the following assumptions:

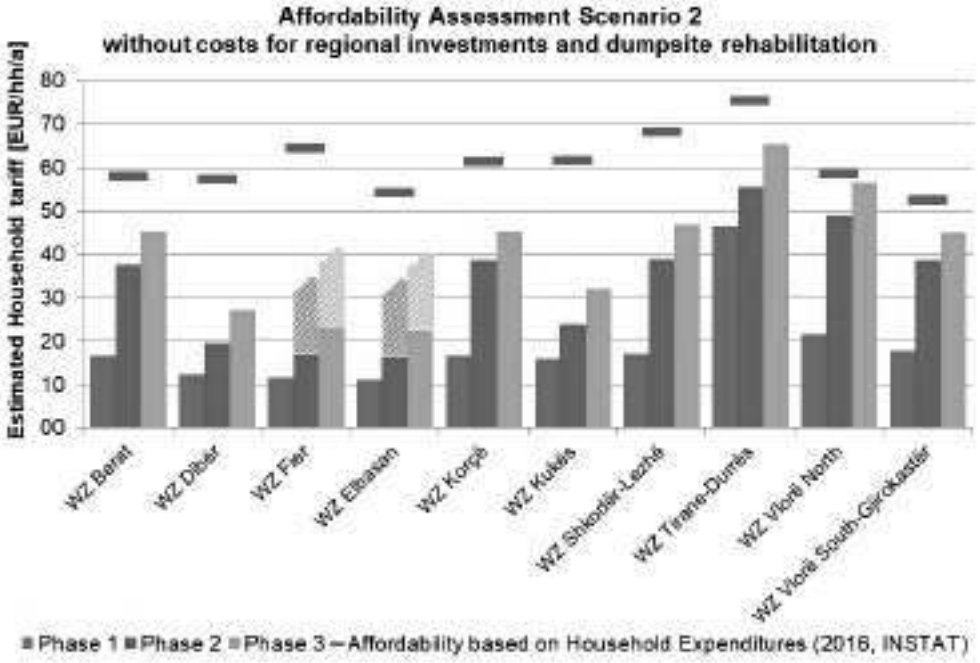
- 80% of the waste management costs will be financed by households and 20% by the commercial entities
- Payment of fees is assumed from all households

In addition, two scenarios have been prepared which vary regarding the consideration of investment costs for regional measures as well as the costs for dumpsite rehabilitation in the tariff calculation. The first scenario assumes that these costs will be covered by the tariff while the second scenario assumes that they can be covered from other sources. With the assumptions mentioned above, tariffs in the first and second scenarios are compared with the maximum affordable tariff. For defining the maximum affordable tariff

1% of the annual expenditure per household in 2016 as published by INSTAT is considered.

The diagonal stripes are added to WZ Fier and WZ Elbasan, since the operating costs of the regional facilities after the end of the concession contracts are not yet known. For the Waste Zone Tiranë-Durrës it is estimated in the second scenario that the costs of the concession contract consist of 70 % investment costs and 30 % operational costs.





Taking the estimated tariffs as presented in the figures above as well as the low fee collection rates in many municipalities into consideration, the tariffs should considerably be increased to implement sustainable SWM systems.

Since a sharp increase of the tariffs may not be accepted by the population, the tariffs need to be increased stepwise.

As a precondition for implementing cost covering tariffs, the municipalities have to be able to calculate their actual waste management costs as well as estimate the future costs and the developments in population/ waste quantities. This can only be done with proper financial and performance monitoring systems. In this respect, the municipalities should strengthen their managerial /administrative capacities and at the same time implement technical systems allowing such monitoring processes.

VIII Prioritisation of Regional Investment Measures

In parallel to the identification of the investment measures a methodology for prioritizing the planned investments has been developed. The prioritization focuses on the following main issues:

- Identification of criteria for prioritization of investment measures for municipal solid waste management
- Identification of indicators and source data (which are available or can be generated with reasonable effort) for measuring the selected criteria
- Development of a transparent and comprehensible methodology for prioritization (merging of criteria and weighing)

Five criteria are defined, against which the priority of an investment measure is assessed. Each criterion relates to an objective and is described by one or more indicators. These indicators measure the status and changes in quantitative, qualitative and descriptive terms. The criteria used for prioritization are:

I. Impact of the investment
II. Extend to which the project contributes to a clean and healthy environment
III. Availability of institutional structures for sustainable operation
IV. Performance and financial sustainability of regional waste management services
V. Performance and financial sustainability of local waste management services

The first three criteria have been used for prioritization of the investment measures in the waste zones, because the assessment can be conducted based on available information. The maximum points to be achieved are 100. Criteria IV and V shall be added later on, once regional waste management services are available in all waste zones, and appropriate monitoring and reporting systems are introduced in all municipalities.

In the tables below the prioritization system is applied to the regional investment measures in the waste zones for phase 1. Based on the results of the assessment each investment measure/ project receives a certain number of points, indicating its priority. Projects with already acquired funding have the highest priority (100 points).

The prioritization system is not applied to the construction of new landfill cells. The timing of these investments is dependent on the filled respectively still available landfill volume of the existing landfill cells.

Results of prioritization of regional investment measures for phase 1

Waste Zone	Regional Investment Measure in Phase 1 (2018-2022)	Investment [EUR]	Result of Prioritization	
			Rating	Ranking
WZ Fier	Moving grate incineration	25,512,000	100	1
WZ Fier	Sanitary Landfill	3,000,000	100	1
WZ Tirane-Durrës	Dirty MRF	1,650,000	100	1
WZ Tirane-Durrës	Moving grate incineration	76,001,000	100	1
WZ Tirane-Durrës	Sanitary Landfill	22,585,000	100	1
WZ Vlorë North	Dirty MRF	4,200,000	100	1
WZ Vlorë North	Sanitary Landfill	6,800,000	100	1
WZ Shkodër-Lezhë	Sanitary Landfill	3,467,000	85	8
WZ Shkodër-Lezhë	Ramp type transfer stations	800,000	85	9
WZ Vlorë South-Gjirokastër	Sanitary Landfill	2,283,000	83	10
WZ Elbasan	Ramp type transfer stations	800,000	82	11
WZ Tirane-Durrës	Ramp type transfer stations	1,594,000	68	12
WZ Vlorë South-Gjirokastër	Ramp type transfer stations	600,000	67	13
WZ Fier	Ramp type transfer stations	800,000	56	14
WZ Kukës	Controlled Landfill	750,000	50	15
WZ Berat	Sanitary Landfill	3,673,000	48	16
WZ Berat	Ramp type transfer stations	400,000	48	17
WZ Dibër	Controlled Landfill	1,000,000	44	18

The result of the prioritization over the three phases is presented in the following table.

Results of the prioritization for regional investment measures over the three phases (without construction of new landfill cells)

WASTE ZONE and INVESTMENT MEASURES	Investment [EUR]	CRITERIA			Total points	Ranking
		Impact of the investment	Contribution to clean and healthy environment	Availability of regional institutional structures		
WZ Berat						
Ramp type transfer stations	400,000	8	40	0	**48**	**17**
MBT with composting	5,067,000	8	0	0	**8**	**23**
Sanitary Landfill	3,673,000	8	40	0	**48**	**16**
WZ Dibër						
Controlled Landfill	1,000,000	4	40	0	**44**	**18**
WZ Elbasan						
Ramp type transfer stations	800,000	32	40	10	**82**	**11**
WZ Fier						
Ramp type transfer station	800,000	36	20	0	**56**	**14**
Moving grate incineration	25,512,000				**100**	**1**
Sanitary Landfill	3,000,000				**100**	**1**
WZ Korçë						
MBT with stabilisation	11,100,000	16	0	20	**36**	**19**
WZ Kukës						
Controlled Landfill	750,000	10	40	0	**50**	**15**
WZ Shkodër-Lezhë						
Ramp type transfer station	800,000	40	40	5	**85**	**9**
MBT with stabilisation	14,848,000	24	0	5	**29**	**20**
Sanitary Landfill	3,467,000	40	40	5	**85**	**8**
WZ Tirane-Durrës						
Ramp type transfer station	1,594,000	28	40	0	**68**	**12**
Dirty MRF	1,650,000				**100**	**1**
Moving grate incineration	76,001,000				**100**	**1**
Sanitary Landfill	22,585,000				**100**	**1**
WZ Vlorë North						
Dirty MRF	4,200,000				**100**	**1**
MBT with composting	7,373,000	14	0	0	**14**	**22**
Sanitary Landfill	6,800,000				**100**	**1**
WZ Vlorë South-Gjirokastër						
Sanitary Landfill	2,283,000	28	40	15	**83**	**10**
Ramp type transfer station	600,000	12	40	15	**67**	**13**
MBT with composting	6,207,000	12	0	15	**27**	**21**

The prioritization needs regular update (e.g. once a year prior to budgeting) in order to consider the actual developments.

7.2 Annex 2: Final Scoping Report for the Strategic Environmental Assessment for Preparation of the "Sector Study for Investment Demand in Integrated Solid Waste Management (ISWM) in Albania"

German Financial Cooperation with the Republic of Albania

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Strategic Environmental Assessment for Preparation of the "Sector Study for Investment Demand in Integrated Solid Waste Management (ISWM) in Albania"

- Final Scoping Report -

24 September 2018

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ABBREVIATIONS

AD	Anaerobic Digestion
AKPT	National Territorial Planning Agency
AKZM	National Agency of Protected Areas
ASIG	State Authority for Geospatial Information
CHP	Combined Heat and Power
CDW	Construction and Demolition Waste
DCM	Decisions of the Council of Ministers
DLDP	Decentralization and Local Development Program
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EPR	Extended Producer Responsibility
ESIA	Environmental and Social Impact Assessment
ESRI	Environmental Systems Research Institute
EU	European Union
FLAG	Albanian Foundation for Local Autonomy and Governance
GIS	Geographical Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
INSTAT	Albanian Institute of Statistics
IPA	Instrument for Pre-accession Assistance
IPT	Investment Planning Tool
ISWM	Integrated Solid Waste Management
IWMP	Integrated Watershed Management Plans
IU	INFRASTRUKTUR & UMWELT
KfW	KfW Entwicklungsbank
LDP	Local Development Plan
LGUs	Local Government Units
MBT	Mechanical Biological Treatment
MoE	Ministry of Environment
MoIE	Ministry of Infrastructure and Energy

MoTE	Ministry of Tourism and Environment
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
MUD	Ministry of Urban Development
NAWSS	National Agency for Waste Supply and Sewerage
NCA	National Council of Archaeology
NGOs	Non-governmental organization
NEA	National Environmental Agency
NSDI	National Strategy for Development and Integration
PPP	Public Private Partnerships
REC	Regional Environmental Center
RDF	Refuse Derived Fuel
REAs	Regional Environmental Agencies
SAA	Stabilisation and Association Agreement
SEA	Strategic Environmental Assessment
SECO	Swiss State Secretariat of Economic Affairs
SEIs	State Environment and Forests Inspectorate
SWM	Solid Waste Management
TS	Transfer Station
USAID	United States Agency for International Development
UTM	Universal Transverse Mercator
VAT	Value Added Tax
WEEE	Waste Electrical and Electronic Equipment
WM	Waste Management
WMC	Waste Management Centres
WZ	Waste Zone
WWTP	Waste Water Treatment Plant

1 Introduction

KfW Entwicklungsbank supports the Government of Albania in its efforts to improve the waste management situation in the country. Among others it has been agreed upon to prepare a Sector Study for Investment Demand in Integrated Solid Waste Management (ISWM) in Albania. The Albanian Project Partner is the Ministry of Infrastructure and Energy (MoIE).

Within the elaboration of the "Sector Study for Investment Demand in Integrated SWM in Albania", a Strategic Environmental Assessment (SEA) shall be prepared.

INFRASTRUKTUR & UMWELT as Lead Consultant in cooperation with COWI and FLAG was commissioned with implementation of consulting services for the SEA.

1.1 Strategic Environmental Assessment

For the realisation of the Strategic Environmental Assessment for the Sector Study the international standard to be applied is the *Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (SEA Directive)*.

The national environmental legislation relevant to the SEA procedure is as following.

- Law 91/2013 on "Strategic Environmental Assessment" has ratified the EU Directive 2001/42/EC, also known as SEA Directive, which requires a series of plans and programs to be undertaken for a Strategic Environmental Assessment progress. The overall purpose of this process is to reconcile environmental requirements in planning preparations and decision-making process, but also increase public participation in the decision-making process
- Strategic Environmental Assessment is one of the requirements for the approval of any spatial plan in Albania based on the Law no.107 / 2014 "On Territorial Planning and Development" and in compliance with the requirements of Law 91/2013 on "Strategic Environmental Assessment" and Law 10440/2011 on "Environmental Impact Assessment"
- DCM nr.219 of 11.03.2015 "For the definition of rules and procedures for consultation with stakeholders and the public as well as the public hearing during the strategic environmental assessment process."
  In support of the Article 100 of the Constitution and point 9 of Article 10 of Law no. 91/2013, dated 28.2.2013, on "Strategic Environmental Assessment"

- DCM nr.507 of 10.06.2015 "For the approval of a detailed list of plans or programs with negative environmental impacts that will undergo the strategic environmental assessment process."

The objectives of the SEA are to identify, describe and assess:

- The likely significant effects on the environment of implementing the Sector Study;
- The most important environmental, natural resource-related and climate change-related constraints bearing on the performance of the sector;
- The opportunities for the Sector Study to contribute to enhancing the state of the environment, building climate resilience of the sector and the population, and promoting low carbon development and the transition to the green economy.

The relevant institution for the SEA is the Ministry of Tourism and Environment (MoTE). Ms. Ornela Shoshi is the contact point for any discussion or communication with the MoTE for the SEA process.

For the Sector Study the SEA is composed of two main parts – a scoping study and a SEA study. The results of the scoping study are compiled in this Scoping Report.

The SEA scoping study will provide:

- A description of the Sector Study;
- A brief description of the SWM sector policy, institutional and legal framework;
- A brief description of the SWM sector;
- An identification of key stakeholders and their involvement
- An identification of the key interactions between the strategic document and the environment;
- An indication of the scope of the environmental baseline to be prepared;
- An indication of the main impact identification and evaluation methodologies to be used in the SEA study.

2 Description of the "Sector Study for Investment Demand in Integrated Solid Waste Management in Albania"

In recent years, considerable progress has been achieved in Albania regarding the development of the regulatory framework in accordance with European Union (EU) policies in the waste management sector. Implementation at the regional or local level and achievement of the agreed targets, however, is still lagging behind. The crucial point between planning and implementation is the financial aspect. Thus, the specific objectives of the Sector Study are:

- to determine the proper methodology and technology for future investments in the SWM sector,
- to determine the proper costs and tariffs,
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments,
- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/ or disposal facilities,
- to propose necessary legal and institutional changes,
- to propose any other accompanying measures.

The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

The following figure shows the main working steps of the Sector Study as well as the project reports that were submitted at the end of the respective project phases.

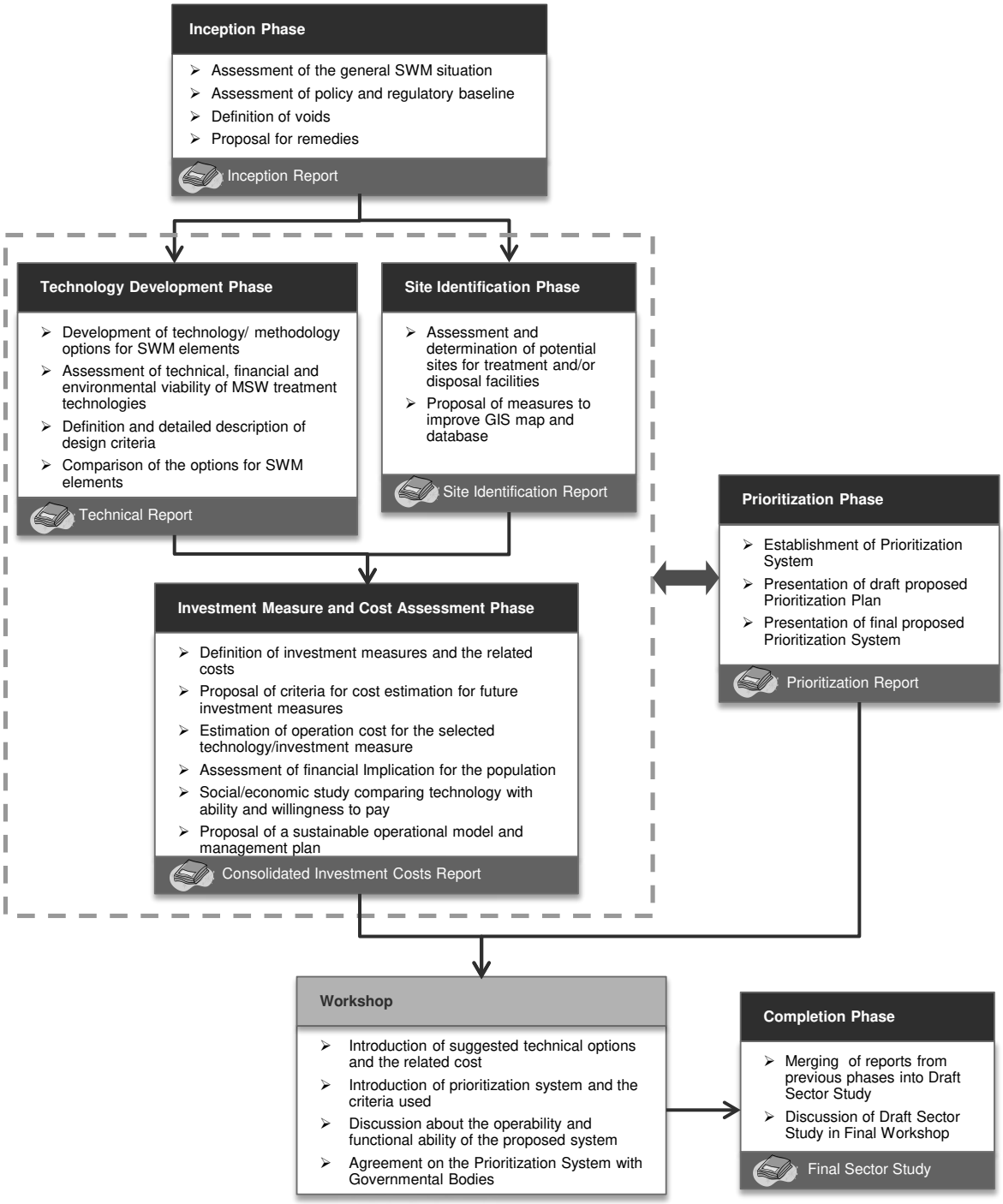


Figure 1 Phases and reports of the Sector Study

The strategic document that has to undergo the SEA is the result of the Completion Phase, the Sector Study. It merges the results of the previous phases. The centrepiece of the Sector Study is a phased investment plan, which allows authorities to take solid

decisions considering long-term developments. The phases of the investment plan are defined as shown in the following table.

Table 1 Phases of the investment plan

Phase	Period
Phase 1 (short-term)	2018 – 2022
Phase 2 (medium-term)	2023 – 2027
Phase 3 (long-term)	2028 – 2032

The executive summary of the Sector Study is attached in Annex 1.

3 Overview of the Existing SWM Situation in Albania

3.1 Policy and Regulatory Framework

3.1.1 Legal Framework

Albanian legislation concerning the environment in general and waste management in particular has advanced through transposing the EU directives into the country's legislation. The country has made considerable progress of the past few years in legal approximation. The framework has been strengthened and policy coordination at the central level improved.

In Albania, legislation comprises laws created by the Parliament, Decisions of the Council of Ministers (DCMs), and Guidelines and Regulations of the ministries. Of particular importance for waste management are the following laws:

- Law on Integrated Management of Waste
- Law on Local Self-Government
- Law on Local Self-Government Finances
- Law on Environmental Permitting
- Law on Environment Protection

Among the DCMs the following are particularly relevant:

- DCM on Integrated Waste Management Costs
- DCM on the Adoption of Rules for Keeping, Updating and Publishing Waste Statistics
- DCM on Separate Collection of Waste at Source
- DCM on Waste Landfills
- DCM on Waste Incineration

3.1.2 National Policies and Plans

Municipal Solid Waste Management in Albania is predominantly guided by obligations based on targets and timelines indicated in the EU directives (as part of the Stabilisation and Association Agreement) as well as the National Waste Management Strategy. The Albanian WM Strategy and Action Plan is currently elaborated under the MoTE, which is

in the process of preparing the final strategy draft for DCM. The specific objectives of the strategy are to provide practical solutions for:

- Meeting the specific obligations of the EC waste management acquis and the framework law on integrated waste management.
- Implementing the Decisions of the Council of Ministers (DCMs) that relate to the waste sector.
- Addressing the major waste management problems faced in the country in a coordinated and integrated way.

The Stabilisation and Association Agreement (SAA) articulates Albania's ambition for EU integration and sets short-, mid- and long-term objectives for the country's environmental sustainability. Achievement of these targets is reported through the series of annual EU reports for Albania. Commitments within the framework of the SAA are laid down in the National Strategy for Development and Integration (NSDI) 2014-2020 or Draft Cross-Cutting Environmental Strategy (2015–2020).

3.2 Institutional Arrangement for Solid Waste Management

Responsibilities for solid waste management in Albania are shared among the national, regional and local levels. This set of functions allocations is currently being revisited in the frame of key policies being developed, i.e. in the framework of the *National Integrated Waste Management Strategy and Action Plan*.

3.2.1 National Level

Law 10463 On Integrated Waste Management is the key legislation that defines institutional responsibilities in the area of waste management to central government organisations, including the Ministry of Tourism and Environment (MoTE) and its subordinated agencies, the Ministry of Infrastructure and Energy (MoIE) – currently the Albanian Project Partner for preparation of the ISWM Investment Plan. Specific tasks are assigned to these ministries through specific decisions of the Council of Ministers (September 2017). The legal framework is complemented with Law 139/2015 on Local Self-government, which defines the roles and responsibilities of municipalities in the management of municipal waste.

Institutional landscape at the central level is proposed for reshape with a central authority to carry out tasks assigned to various ministries, suggested by the current draft waste management strategy.

3.2.1.1 Ministry of Tourism and Environment (MoTE)

MoTE takes the lead in overall regulatory and policy framework for all types of waste, and oversees fully the administration of hazardous waste (see below). It is the main responsible institution for the design and implementation of the national strategy and action plan for waste management in the country. Along with other subordinated institutions, including the National Environmental Agency (NEA) and the State Inspectorate of Environment and Forests, the ministry has the overall responsibility for the establishment and monitoring of a waste management system.

Specific responsibilities of MoTE, as revised upon restructuring of ministerial responsibilities in September 2017 (DCM 509) include the following:

- Design and implementation of environmental policies, including waste treatment standards, and the effects it brings to the air and the environment, air quality, noise, industrial pollution, chemicals, climate change and monitoring of environmental and water quality indicators, and the assessment of the impact on the environment,
- Design, and monitor implementation of the National Strategy, the National Plan and Regional Plans, and develop other legislation and bylaws to ensure implementation of the National Strategy and the Plan, with particular focus on the enforcement of the waste hierarchy as defined in Law 10463 and subsequent bylaws,
- Issue permits to entities that operate in the area of waste management, including export and trans-boundary shipment of non-hazardous waste,
- Organise and manage data registers relevant to various issues related to waste management, and define and permit construction of sites for disposal of hazardous waste, and entities that transport, dispose and treat hazardous waste,

Annual budget assigned to MoTE for 2018, focuses on programs for environmental protection and administration of forests in addition to the tourism development.

MoTE has assigned the Sector of Waste Management on waste related issues. It operates as part of the Directory Environmental Projects' Design and Feasibility. MoTE is supported in implementation and enforcement of environmental policies by: National Environmental Agencies (NEAs), State Environment and Forests Inspectorate (SEIs) and Regional Environmental Agencies (REAs), with branches throughout the country that also interact with local authorities.

Despite the wide range of responsibilities and authority, given to these institutions under the current legislation, the general opinion is that they operate with a limited number of

personnel, lack of basic equipment and proper premises and have few capacities. As such, their role is rather limited to the collection of information that is often inaccurate and contradicts information from other institutions, and to the preparation of the annual Report on Environmental Protection.

The MoTE also supports the meetings of the National Committee for Integrated Waste Management, established through DCM 967, dated 25.10.2013 to coordinate policies, efforts and resources at the national level, propose legislative and administrative measures for waste management and deliver an annual report on the situation of waste management in the country. The committee is supported by a National Advisory Group (i.e. technical experts group) on Solid Waste.

3.2.1.2 Ministry of Infrastructure and Energy (MoIE)

The role of MoIE in the waste sector is based upon Law no. 10463 and DCM 504, enacting the revised responsibilities at the central government level. The decision also provided for transfer of territorial planning and positioning of landfills and other waste treatment facilities from the previous Ministry of Urban Planning including the *National Agency for Territorial Planning.* MoIE is the only central government institution that has a budgetary program on Management of Urban Waste, in its mid-term budget.

MoIE covers investments for infrastructure and the development of standards and best techniques for management of municipal waste and waste from construction and demolition, as well as the project cycle with regard to the construction (project planning, design and implementation) of regional landfills. The ministry also coordinates and monitors the activity of waste dumpsites, the use of regional landfills and incineration plants, and defines the technical criteria for the study and provides for closure of urban dump sites.

This ministry has been responsible for collection of data on municipal and construction and demolition waste, for many years constituting the major and only source of information on the amount of waste generated in the country.

In cooperation with MoTE, MoIE has the authority to monitor activities relevant to disposal and treatment of municipal and construction and demolition waste, through the design, construction and implementation of landfills and incinerators. Decisions concerning the procedures for the study and construction of incinerators in Elbasan, Fier and Tiranë are led and taken by MoTE. The Sector of Development Programs for the Treatment of Urban Solid Waste, which comprises six staff, carries waste management responsibilities in MoIE.

Other ministries involved in waste management include the following:

- Economic Development, Trade and Entrepreneurship (with regard to private sector involvement and recycling industry),
- Health (health-care waste),
- Agriculture, Rural Development and Water Administration (agricultural waste),
- Energy and Industry (e.g. mining waste),
- Defence (military waste),
- Finance (financial issues).

3.2.2 Regional Level

Regional councils are the second-tier of local government in Albania, not directly responsible for waste management services at the local level but legally they are assigned to provide the regional policy framework through regional plans for waste management. Nevertheless, the councils are responsible for approving respective local waste management plans before they enter into force (article 13, Law no. 156/2013, amending Law no. 10463/2011). The regional councils' own function is the development and implementation of regional policies and their harmonization with the national policies. The councils develop and approve the regional plans for integrated waste management and report annually on their implementation to MoTE (article 13, Law no. 156/2013 amending Law no. 10463/2011). Role of regional councils had been revisited in the last few years, while the Draft National WM Strategy suggests a reduced role for the Regional Councils in waste management.

3.2.3 Local Level

Law no.139/2015 On Local Self-Government defines the responsibilities and the authority of LGUs with regard to waste management in Albania. Specifically, the collection, transportation, disposal and treatment of municipal waste is defined as an own function of municipalities. Under this definition, municipalities have the right and the responsibility to manage service delivery in a way that best suits their specific conditions and to cooperate with other municipalities, set service fees and tariffs and a mechanism for revenue collection, and construct and administer facilities for waste treatment. Law no. 8094, dated 21.03.1996, is still referenced with regard to the current collection, transport and treatment of waste, and modern standards are still to be fully employed by all municipalities.

Specific waste management tasks for municipalities and regional councils are defined with Law no. 10463/2011 On Integrated Waste Management, as amended, and several bylaws

derived from the aforementioned law. Direct responsibilities of LGUs are related only to planning and reporting for waste management in their respective jurisdictions.

In Albanian municipalities, waste management generally falls under the responsibility of the Directorate of Public Services.[1] Cleaning contracts are drafted and signed by the municipalities, also in accordance with the provisions of Law no. 8094, dated 21.3.1996, 'On the removal of public waste'. The model of these contracts does not offer standards of waste management as outlined in Law no. 10463 'On integrated waste management', dated 22.09.2011, and the sub-legal acts deriving from it.

Planning instruments at the local level include local waste management plans, which have to be in line with national and respective regional waste management plans. At the local level, SWM services are either implemented with the municipalities own personnel and equipment or by private contractors.

3.3 Solid Waste Management Services

In spite of improvements regarding the waste collection coverage in recent years, collection services still do not cover all settlement areas, especially in agricultural areas. Whereas urban and suburban city centres generally present themselves fairly clean, alongside roads and in the outskirts scattered waste as well as piles of waste and especially building rubble can be seen frequently. Reasons for this unsatisfactory situation are manifold, including poor condition and insufficient number of waste collection equipment (vehicles and containers). As a countrywide average the waste collection rate is estimated at 74 %.

In Albania, current overall recovery and recycling rates are estimated at less than 10 %. Besides the Eco Tirana Project, where separate collection has been introduced in the beginning of 2017 (but still needs substantial improvement), recyclables are mostly collected by the informal sector. Nevertheless, the recycling industry in Albania is well established and there is sufficient capacity for marketing and processing of collected recyclables. However, it is obvious that an increase of the recycling and recovery rates can only be achieved with a stronger engagement of the municipalities, i.e. by implementation of separate collection according to legal requirements. But the investment and operating costs necessary for the implementation of formal municipal separate

[1] Generally the public services directorate, but sometimes the environment directorate, or the urban planning directorate. A municipality might operate with a local enterprise (*ndermarrje pastrimi*) responsible for cleaning, greening and lighting. It is important to note here that the institutional framework of the local government units is diverse, and that there a responsible sector that deals with waste is not always clearly defined. Thus, collecting reliable data from the municipalities proves to be a challenge.

collection in most cases cannot be compensated by the revenues for marketing of the separately collected recyclables. Therefore, additional funding will be required.

The Draft WM Strategy foresees the recovery of various waste streams (including packaging waste) through Extended Producer Responsibility (EPR). Within this scheme the producers for example will have to cover the costs of introducing separate collection and management systems for packaging waste. Details of the EPR system (including the regulatory framework) still need to be elaborated.

In general it can be stated that improper disposal of waste is the most serious challenge of the current SWM system in Albania. In recent years various projects have been implemented focussing on improvement of the landfills in the country, e.g. implementing sanitary landfills according to the standards of the EU landfill directive. Due to economy of scale, these projects were mostly planned for several municipalities or as regional facilities. Furthermore, promoted by the MoTE, various initiatives for incineration of municipal waste have been started

4 Overview of Key Stakeholders and Their Involvement

The MoIE[2] is leading the preparation of the Sector Study. Since the Ministry is one of two line-ministries regarding waste management, the MoTE and the National Coordinator for Solid Waste Management from the Prime Minister's Office is also closely involved in the preparation process. Further stakeholders involved are the National Agency for Water Supply and Sewerage (NAWSS), also in authority for solid waste management) as well as the National Territorial Planning Agency (AKPT).

The involvement is done in particular by regular meetings, in which the main contents and suggestions of each phase of the Sector Study (compare Figure 1) are presented and discussed. In this way, commenting and approval of interim results is supported and necessary decisions are jointly prepared. Other frequent participants of these meetings are GIZ, as they are working on the new national waste management strategy and action plan on behalf of the MoTE, and KfW Entwicklungsbank, as the donor, who is financing this project.

The process for the preparation of the Sector Study was initiated in March 2017. Since then, meetings, especially with the stakeholders mentioned above, have taken place at regular intervals. Due to the governmental restructuring, however, there was a break in the preparation of the Sector Study from August – October 2017. After resuming work on the Sector Study in November 2017, a two-day workshop took place in January 2018 during which the mentioned stakeholders had the opportunity to discuss and collate proposals for waste zones (catchment areas,), to identify ISWM measures in the waste zones and to discuss the prioritisation system and the criteria used. The regular meetings with the main stakeholders continued after the workshop in January till today.

In a further stage of the process for preparation of the Sector Study waste area meetings have been conducted in the respective municipalities, in order to get results and conclusions of the respective municipal and qark administration regarding their allocation to the specific waste zones as well as regarding the measures that are proposed in the Sector Study for the municipal level. In addition to the waste area meetings with representatives of the municipal and qark administration, a comparable meeting was held with NGOs.

In addition, the Draft Sector Study is available to all 61 municipalities as a file.

[2] Before the restructuring of the Government in autumn 2017, it was the Ministry of Urban Development (MUD).

The following table lists all key stakeholders who have been or are consulted in the development of the Sector Study. In Annex 2 a list of workshops of the Inter-ministerial Working Group is presented. Annex 3 provides the minutes of the waste area meetings.

Table 2 Key stakeholders involved in the process for preparation of the Sector Study

Key stakeholder	Type of involvement: bilateral meetings, multilateral meetings, in writing
G**overnment institutions**	
Ministry of Infrastructure and Energy (MoIE) (Project Executing Agency)	Bilateral and multilateral meetings, in writing
Ministry of Tourism and Environment (MoTE)	Multilateral meetings
Coordinator for Solid Waste Management from the Prime Minister's Office	Multilateral meetings
Ministry of Health and Social Protection	Multilateral meetings
Ministry of Interior	Multilateral meetings
National Agency for Water Supply and Sewerage (NAWSS)	Multilateral and bilateral meetings
National Territorial Planning Agency (AKPT)	Multilateral and bilateral meetings
National Environment Agency	Multilateral meetings
The National Agency for Protected Areas	Multilateral meetings
Public Health Institution	Multilateral meetings
Agricultural Technological Transfer Center, Fushë-Krujë	Multilateral meetings
Municipal and qark administrations	
Qark Berat (Waste Zone Berat)	Multilateral meetings
Municipalities Berat, Ura Vajgurore, Kuçovë, Skrapar, Poliçan	Multilateral meetings
Qarks Vlora and Gjirokastër (Waste Zone Vlora South – Gjirokastër)	Multilateral meetings
Municipalities Gjirokastër, Libohovë, Tepelenë, Memaliaj, Përmet, Këlcyrë, Dropull, Himarë, Sarandë, Konispol, Finiq, Delvinë	Multilateral meetings
Qark Fier (Waste Zone Fier)	Multilateral meetings
Municipalities Fier, Patos, Roskovec, Lushnjë, Divjakë, Mallakastër	Multilateral meetings
Qarks Tirana and Durres (Waste Zone Tirana-Durres)	Multilateral meetings
Municipalities Vore, Kamez, Tirane, Kavaje, Kruje, Durres, Shijak	Multilateral meetings
Qarks Shkoder and Lezhe (Waste Zone Shkoder-Lezhe)	Multilateral meetings
Municipalities Malësi e Madhe, Shkodër, Vau–Dejës, Pukë, Fushë-Arrëz, Lezha, Mirditë, Kurbin	Multilateral meetings
Qark Elbasan (Waste Zone Elbasan)	Multilateral meetings

Key stakeholder	Type of involvement: bilateral meetings, multilateral meetings, in writing
Municipalities Elbasan, Cërrik, Belsh, Peqin, Gramsh, Librazhd, Prrenjas, Rrogozhinë	Multilateral meetings
NGOs	Multilateral meetings
G & G Group Tirana	Multilateral meetings
Community Environment Association	Multilateral meetings
Albanian Association of Biologists	Multilateral meetings
NCA	Multilateral meetings
Bells Movement	Multilateral meetings
Partners Albania	Multilateral meetings
Agricultural University	Multilateral meetings
REC Albania	Multilateral meetings
Association for New Environmental Policy	Multilateral meetings
Association of Environmental Lawyers	Multilateral meetings
Organic Agriculture Association	Multilateral meetings
Ekolëvizja	Multilateral meetings
EDEN Center	Multilateral meetings
Organization MILEU-CONTACT	Multilateral meetings
International donors	
KfW Entwicklungsbank	Bilateral and multilateral meetings, in writing
GIZ	Multilateral and bilateral meetings, in writing
SECO	Bilateral and multilateral meetings, in writing
The European Union's IPA Programme for Albania	Bilateral and multilateral meetings, in writing

Whenever advised, further multi-or bilateral meetings are held with other stakeholders. Furthermore, the necessary exchange of information also takes place on a written basis.

5 Description of Key Environmental Aspects to be Addressed in the SEA Study

5.1 Geographic Scope

The objective of the Sector Study is the definition of a National Investment Plan in the waste management sector. As such the assessment will be focussed on a national strategic level and collection of baseline data will reflect this.

5.2 Temporal Scope

Short-, medium- and long-term impacts will be considered during the assessment. The National Investment Plan for the waste management sector is also divided into short-, medium- und long-term measures (see Figure 1). As a result, it is proposed, that the time lines for the impact assessment should be identical to the timelines of the Investment Plan. That is to say, for the purpose of the SEA a short term horizon covering the years 2018 – 2022, a medium term horizon covering the years 2023 – 2027 and a long-term horizon covering the years 2028 – 2032 will be considered.

5.3 Parts of the Sector Study to Be Assessed

A decision needs to be made as to what parts of the Sector Study should be assessed and to what level of detail. The purpose of the SEA Study will be to provide a meaningful assessment of those parts of the Sector Study that may lead to significant environmental effects. In doing this it will ensure that the requirements of the SEA Directive and associated environmental regulations are being met in adopting the Sector Study.

The following table identifies those elements of the Sector Study proposed to be assessed as part of the SEA and also explains why they are/ are not assessed. This information is subject to change based on potential comments received to this this Scoping Report and the final scope and content of the Sector Study.

Table 3 Elements of the Sector Study Proposed for Assessment

Chapter	Decision and justification
Chapter 0: Executive Summary	**No**. This chapter summarizes the essential content and key points of the Sector Study and therefore does not require its own assessment.
Chapter 1: Introduction	**No**. This chapter provides an overview of the background to and the process of preparing the Sector Study.

Chapter	Decision and justification
Chapter 2: Existing SWM Situation	**No**. This chapter describes the current situation of waste management in Albania. The description of the Environmental Baseline can benefit of some baseline information provided in this chapter.
Chapter 3: Technology Options for SWM	**No**. This chapter explains and compares technology options for SWM.
Chapter 4: Waste Zones and Sites for Regional Investment Measures	**Yes**. The SEA will investigate the demarcation of waste zones and the locations for potential new Waste Management Centres.
Chapter 5: Investment Plan	**Yes**. The SEA will examine the investment plan regarding the new regional facilities and the potential risks associated.
Chapter 6: Prioritisation of Investment Measures	**No**. This chapter describes the methodology for prioritising the planned investments. Recommendations from the SEA may influence the prioritisation methodology.
Chapter 7: Next Steps	**No**. This chapter explains necessary steps to be taken for publishing the Sector Study as a binding plan for public authorities.

5.4 Key Environmental Aspects Arising from the Sector Study

Potential significant environmental effects, if unmitigated, and likely significant environmental effects, if unmitigated, will be identified by the SEA and assessed. Such effects will include, inter alia, positive and negative effects, short-, medium- and long-term permanent and temporary effects as well as cumulative effects.

Construction and operational effects will be considered. Where appropriate, seasonality will be considered in determining relevant effects.

Potentially significant environmental effects, if unmitigated, of implementing the Sector Study, are expected to include those listed in the table below.

Table 4 Environmental components and potential effects

Environmental Component	Potentially significant effect, if unmitigated
Biodiversity and flora and fauna	• Effects on protected areas • Effects on flora and fauna and (sensitive) habitats

Environmental Component	Potentially significant effect, if unmitigated
Population and human health	• Proximity of Waste Management Centres and other regional facilities to population centres • Improvements in the accessibility and the technical standard of regional waste management facilities contribute to better protection of the environment and human health • Possible effects on tourism and recreational land uses • Effects on air quality • Effects on soil • Effects on water quality (ground and surface waters) • Effects on traffic and transport networks • Potential for nuisance (noise, odour etc.)
Soil and land use	• Land requirements for regional waste management centres and further regional facilities • Influence on land use practices • Effects on soil quality due to reduction of leachate • Effects on soil quality from use of fertiliser produced in composting plants in regional waste management centres • Impacts on soil of any incidents on site at regional waste management centres and further regional facilities
Water	• Impacts on surface and groundwater quality (e.g. from reduction of leachate or waste in surface waters) • Impacts on ecological status of water bodies • Impacts on surface and groundwater of any incidents on site at regional waste management centres and further regional facilities
Air quality and climatic factors	• Effect of odour generated in regional waste management centres • Effect of air emissions from transport of waste • Effect of air emission from regional waste management facilities • Greenhouse gas emissions from transport of waste • Reduction of greenhouse gas emissions through disposal of waste in regional waste management centres and reduction of the number of uncontrolled and unsanitary dumpsites
Material assets	• Use of resources (building material and energy) for regional waste management centres and further regional facilities • Reuse of material by recycling of respective waste fractions • Use of transport networks • Use of resources in operation of regional waste management centres and further regional facilities
Architectural, archaeological and cultural heritage	• Effects on cultural, architectural and archaeological heritage features in the proximity of proposed regional waste management centres and other regional facilities • Potential of disturbance of previously undiscovered near or within development areas of regional waste management centres and other regional facilities
Landscape	• Effects on general landscape character and sensitive receptors

6 Description of the Scope of the Environmental Baseline to be Prepared in the SEA Study

An environmental baseline will be compiled for the Sector Study. This will include

- a description of the state of the environment at present
- a discussion of the key problems/ issues currently being faced nationally and
- a description of the expected evolution of the environment should the Sector Study not be implemented

The SEA Study will present a full description of the relevant aspects of the environmental baseline data for the country with regard to municipal waste management. The baseline will reflect the strategic nature of the Sector Study. The environmental baseline will be presented in the Environmental Report under a number of Strategic Environmental Assessment topic headings as follows:

- Biodiversity, flora and fauna
- Population and human health
- Soils and land use
- Water
- Air quality and climatic factors
- Material assets
- Architectural, archaeological and cultural Heritage
- Landscape

Under each of the topic heading the current state of the environment with regard to municipal waste management will be identified along with the key problems/ issues and the expected evolution of the environment in the absence of the Sector Study. The data sources that will be used to compile the current state of the environment are presented in the following subchapter.

6.1 Baseline Data Sources

It will be key that the current state of the environment is described using the most up to date environmental data, information and reports. Where data gaps are found for particular aspects of the current state of the environment, the significance of these data

gaps will be clearly stated. In addition, it will be stated whether these gaps can be reasonably and realistically addressed during the SEA process.

Key documents that will be referenced will be the

- State of the Environment Report and
- Environmental Performance Review

It is intended to utilise Geographical Information Systems (GIS) where possible to display and analyse relevant information relevant. The following table provides a preliminary overview of each of the SEA topics that will be outlined in the SEA baseline. The table also includes a non-exhaustive list of the potential data sources that will be used to compile the baseline and in addition it outlines the preliminary extent of the assessment based on these available data sources. Given the strategic nature of the Sector Study, it is recognised that there are limitations on the extent of the scope of an environmental assessment and therefore it is beneficial to outline such limitations at this early stage.

Table 5 Baseline data sources and extent of assessment

SEA Topic	Potential Data Source	Potential Extent of Assessment based on Data Sources
Biodiversity, flora and fauna	• GIS data on nature protection zones (ASIG and NAWSS) • General National Spatial Plan 2015 – 2030 (AKPT) • National Strategy on Biodiversity • Biodiversity National Network of Albania (AKZM): species fact sheets, species data, and webGIS, protected areas	National and regional datasets are available for aspects relating to biodiversity, flora and fauna.
Population and human health	• INSTAT Albanian Institute of Statistics • General National Spatial Plan 2015 – 2030 (AKPT) • GIS data on residential areas, touristic areas, vegetation – agricultural areas (MoTE, ASIG, NAWSS)	National data and information are available for population density and distribution and the potential impacts of the Sector Study can be assessed relative to the available information. Topic of human health will be referenced in relation to indirect impacts from air quality, noise, water quality etc.

SEA Topic	Potential Data Source	Potential Extent of Assessment based on Data Sources
Soils and land use	• GIS data on residential areas, transport infrastructure, agriculture, existing technical infrastructure, geological and hydro-geological conditions, touristic areas (MoTE, ASIG, NAWSS) • General National Spatial Plan 2015 – 2030 (AKPT) • Albania land cover country fact sheet	National data and information are available for soil and land use at a county / national scale. This is sufficient for the strategic nature and the geographic scope of the Sector Study.
Water	• GIS data on waterways and waterbodies (NAWSS) • Information on flooding areas (not nationwide) • General National Spatial Plan 2015 – 2030 (AKPT) • Albanian Water Supply and Sanitation Sector Strategy • Water Supply and Sewerage Master Plan for Albania • Albania 2017 bathing water report	National data and information is available to a limited extend (e.g. information on flooding areas is not available nationwide). As far as possible, issues relating to waste and water quality will be identified.
Air quality and climatic factors	• Air pollution – State and impacts (Albania) • Third National Communication of the Republic of Albania on Climate Change	National data and information are available at a county / national scale. This is sufficient for the strategic nature and the geographic scope of the Sector Study.
Material assets	• Albania – material resource recovery • Albania – municipal waste management • Draft National SWM Strategy and Action Plan • International Energy Agency - Statistics for Albania • General National Spatial Plan 2015 – 2030 (AKPT)	National information is available for certain resources that may be affected by the Sector Study.
Architectural, archaeological and cultural heritage and landscape	• GIS data on cultural heritage sites (MoTE, ASIG) • Albania – UNESCO World Heritage Centre • There is no information for landscape publicly available on national level	National data and information are available for cultural heritage, however the scale of the data and information are directed towards local project specific sources. Anyhow, the available information is sufficient for the strategic nature and the geographic scope of the Sector Study.

7 Recommendation on Specific Impact Identification and Evaluation Methodologies to Be Used in the SEA Study

7.1 Consideration of Alternatives

An assessment of reasonable alternatives is required as part of the SEA process. Due to the strategic nature of the Sector Study and the far reaching effects in the Technology Development Phase (see Figure 1) different technology options for waste management have been considered, inter alia focussing on

- Development of technology/ methodology options for SWM elements
- Assessment of technical, financial and environmental viability of MSW treatment technologies
- Comparison of the options for SWM elements

The options have been considered and discussed under the following aspects:

- Implications of policy and regulation framework
- Identification of policy conform and proven technology options
- Financial feasibility of proven technology option

After the deduction of implications of the policy and regulation framework, policy conform technology option were identified. The technology options presented in the Table 6 cover a wide range of potential SWM elements of the lifecycle approach.

Table 6 Considered alternatives

	Mixed waste		Separated waste	Inert Waste
Street Cleaning	Street cleaning			Inert Waste Management
Waste Collection	Waste collection		Separate waste collection	
Transport and Transfer	Transfer and Transport			
Mechanical Treatment	Dirty MRF	Mechanical Biological Treatment (MBT)	Clean MRF	
Biological Treatment	Biological drying		Composting, Digestion	
Thermal Treatment	Incineration, Pyrolysis, Gasification, Plasma treatment, Waste to Diesel Technology			
Disposal	Sanitary landfill, Landfill rehabilitation			

The main focus was on the identification and selection of proven technologies (long-term experiences in construction and operation) and in another step the consideration of the financially feasibility (considering synergies with on-going and planned donor funded projects). Emerging waste to energy technologies – such as gasification and pyrolysis – have been well known processes for a long time, but only for well-defined feedstock like coal or wood. The experience with respect to the treatment of municipal waste is still very limited. It can be summarized that gasification, pyrolysis, plasma treatment and waste to diesel are not long-term proven technologies for municipal waste treatment and therefore are excluded (written in red in the table above).

7.2 Identification of Objectives, Targets and Indicators

A key purpose of scoping is to set out sufficient details about the proposed methodological framework for the assessment of environmental effects to allow forming a view on this matter. It is proposed to use an objectives-led assessment which will allow an assessment against defined SEA Environmental Objectives for each of the identified issue areas.

The preceding sections have identified the environmental characteristics and key environmental issues relating to the Sector Study. This section uses that information to set out a series of draft SEA objectives, indicators and associated targets. These will be used

in the SEA study to predict the likely environmental effects of the Sector Study. The use of these objectives will ensure that, following the scoping study, the SEA study will only focus on those issues that are most relevant and significant.

Set out in the following table are the draft SEA objectives that are being considered to test the potential environmental impacts of the Sector Study. The assessment criteria are examples of the issues that will be considered. It should be noted that these are draft objectives only and are provided for the purpose of discussion at this scoping stage. Feedback on the draft objectives with a view to updating them prior to the SEA study is appreciated.

Table 7 Draft SEA environmental objectives

Related to SEA topic(s)	Environmental objective and targets	Suggested draft SEA targets
Biodiversity, flora and fauna	• Protection of biodiversity • Protection of flora and fauna and their natural habitats	• Protection of natural and biological resources • Protection of protected areas and their natural resources
Population and human health	• Protection and improvement of human health	• Improvement of quality of life through environmental protection • Protection of human health from harmful environmental impacts that are capable, by nature, extent or duration, of causing dangers, significant disadvantages or significant disturbances to the general public or the neighbourhood (e.g. by air pollutants, noise, hazardous substance and germs)
Soils and land use	• Preservation of healthy and ecological functions of soil • Prevention of soil damage incl. protection of soil structure (erosion, soil compaction) • Remediation and restoration of damaged soil	• Protection of soil capability to produce as well as its improvement and rehabilitation. • Preservation of natural level of organic matter and normal level of physical, chemical and agility indicator of agricultural land.

Related to SEA topic(s)	Environmental objective and targets	Suggested draft SEA targets
Water	• Good ecological status of surface water as well as groundwater • Good chemical status of surface water as well as ground water	• Protection of surface water as well as groundwater and improvement of its ecological status • Protection of surface water as well as ground water and improvement of its chemical status
Air quality and climatic factors	• Protection and preservation of air quality • Prevention and reduction of pollution causing ozone layer damage and climate change	• Reduction and stabilization of greenhouse gas emissions • Promotion of the use of renewable energy and of energy efficiency
Material assets	• Prudent and rational use of nature and its resources	• Improvement of quality of natural resources • Reduction of the use of resources and improving the efficiency of such use • Responsible utilisation of natural resources
Architectural, archaeological and cultural Heritage	• Preservation of cultural heritage	• Conservation and protection of the assets of cultural heritage
Landscape	• Preservation and restoration of cultural and aesthetic landscape values	• Improvement of landscape diversity

The targets will be considered in preparation of the environmental baseline and during the environmental assessment, in order to meet the SEA environmental objectives of the Sector Study.

Based on the environmental baseline prepared, indicators will be defined bearing in mind the availability of data and the feasibility of making direct links between any changes in the environment and the implementation of the Sector Study. That is to say, the indicators will be developed during the SEA study, including in response to comments received on this Scoping Report.

8 Next Steps

With this document, the Consultant defined the scope of the SEA Study, which will be carried out as a next step.

As a next step, the SEA Study will be prepared as follows:

- Definition of the SEA baseline
- Strategic Environmental Assessment of the relevant part of the Sector Study

Relevant results from the SEA will be incorporated in the Sector Study before both documents are finally submitted to the MoIE and KfW.

9 Annexes

9.1 Annex 1: Executive Summary of the Sector Study

0 Executive Summary

I Introduction

KfW Entwicklungsbank supports the Government of Albania in its efforts to improve the waste management situation in the country. Among others it has been agreed upon to prepare a Sector Study for Investment Demand in Integrated Solid Waste Management (ISWM) in Albania. The Albanian Project Partner is the Ministry of Infrastructure and Energy (MoIE).

In recent years, considerable progress has been achieved in Albania regarding the development of the regulatory framework in accordance with European Union (EU) policies in the waste management sector. Implementation at the regional or local level and achievement of the agreed targets, however, is still lagging behind. The crucial point between planning and implementation is the financial aspect. Thus, the specific objectives of the Sector Study are:

- to determine the proper methodology and technology for future investments in the SWM sector,
- to determine the proper costs and tariffs,
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments,
- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/ or disposal facilities,
- to propose necessary legal and institutional changes,
- to propose any other accompanying measures.

The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

II Existing Solid Waste Management Situation

Considerable improvement has been made in recent years with regard to developing the regulatory framework. Furthermore, waste collection coverage has been expanded and initial steps for formal recycling and improvement of waste disposal have been taken.

Nevertheless, the overall progress is slow and in general the requirements set by the policy and legal framework are not met. Key obstacles and shortages in the SWM sector include:

- Unclear or non-functional division of responsibilities at national level,
- Unclear or non-functional organisation of “regional” waste management services,
- Present policies, plans and regulations not (yet) being implemented,
- Insufficient human and institutional capacities,
- Disposal of waste in poorly managed landfills and dumpsites,
- Insufficient financing of advanced waste management services,
- Lack of public awareness and enforcement.

The most important success factor for improvement of waste management in Albania will be the sustainable financing of services. Currently, there are already various initiatives in place to address this issue, including

- Definition of requirements for cost calculation and tariff setting,
- Clarification of priorities and criteria for SWM investments,
- Broadening of the revenue basis, e.g. through the implementation of Extended Producer Responsibility (EPR) schemes.

III Technology Options for SWM

A set of policy conform, empirical proven and financially feasible technology options is briefly described as well as compared by means of the respective institutional requirements, technical criteria, social-economic importance, environmental impacts and financial characteristics. With respect to the importance of the financial feasibility, a summary of key specifications of SWM components is compiled in the following table.

As no long-term experience is available for the costs of waste treatment in Albania, the respective costs have been taken from the EU reference data base.

Summary of Key Specifications of SWM Components

SWM Component	Minimum Throughput	Waste Types	Specific Invest	Specific Net Costs ** including revenues		Economy of Scale	Remarks
				related to the annual troughput	converted for a reference system with 50,000 t/a collected waste		
Street Cleaning							
Manual street sweeping	Flexible	Mixed municipal waste	6.6 EUR/t (50,000 t/a)	10.5 EUR/t	10.5 EUR/t	low	Specific costs related to collected waste amount of 50,000 t/a
Mechanical street sweeping	Flexible*	Mixed municipal waste	17.3 EUR/t (50,000 t/a)	11.3 EUR/t	11.3 EUR/t	low	Specific costs related to collected waste amount of 50,000 t/a
Waste Collection							
Collection of mixed waste	Flexible*	Mixed municipal waste	44 EUR/t (25,000 t/a)	17.2 EUR/t	8.6 EUR/t	medium	Based on the calculations for Korca Region
Collection of organic waste	Flexible*	Organic waste	36 EUR/t (15,000 t/a)	18.7 EUR/t	5.6 EUR/t	medium	Based on the calculations for Korca Region
Collection of dry recyclables	Flexible*	Dry Recyclable materials	116 EUR/t (10,000 t/a)	35.4 EUR/t	7.1 EUR/t	medium	Based on the calculations for Korca Region
Waste Transfer and Transport							
Ramp type transfer station	Flexible*	Mixed municipal waste	17.2 EUR/t (50,000 t/a)	7.6 EUR/t	7.6 EUR/t	medium	For an average transport distance of 50 km
Ramp type TS with compaction	Flexible*	Mixed municipal waste	18.8 EUR/t (50,000 t/a)	7.2 EUR/t	7.2 EUR/t	medium	Minimal savings versus risk of breakdown, for an average transport distance of 50 km
Material Recovery Facility (MRF)							
Dirty MRF	Flexible*	Mixed municipal waste	100 EUR/t (50,000 t/a)	8 EUR/t**	8 EUR/t**	medium	Quality of recyclables is low compared to clean MRF
Clean MRF	Flexible*	Separately collected dry recyclables	80 EUR/t (10,000 t/a)	25 EUR/t**	5 EUR/t**	medium	Without costs of separate collection
Mechanical Biological Treatment (MBT)							
MBT with AD	> 10,000 t/a	Mixed municipal waste	291 EUR/t (50,000 t/a)	73 EUR/t**	73 EUR/t**	high	High requirements for the anaerobic treatment of mixed municipal waste
MBT with stabilisation	> 25,000 t/a	Mixed municipal waste	252 EUR/t (50,000 t/a)	58 EUR/t**	58 EUR/t**	high	The existing plants in Germany have an average throughput of 150,000 t/a
MBT with composting	> 10,000 t/a	Mixed municipal waste	194 EUR/t (50,000 t/a)	52 EUR/t**	52 EUR/t**	medium	High area demand
Composting (Material Recovery)							
Windrow composting	Flexible*	Separately collected organic waste	140 EUR/t (5,000 t/a)	20 EUR/t	2 EUR/t	low	Treatment of food waste causes higher technical requirements.
Fully automated in-house plant	> 10,000 t/a	Separately collected organic waste	200 EUR/t (25,000 t/a)	50 EUR/t	25 EUR/t	high	Based on the Concept Report and Feasibility Study for Kakheti Region, Georgia
Anaerobic Digestion (Energy Recovery)							
Anaerobic Digestion (AD)	Flexible*	Separately collected organic waste	170 EUR/t (25,000 t/a)	50 EUR/t**	25 EUR/t**	medium	Based on the calculations for the Feasibility Study for Kakheti Region, Georgia
Waste Incineration (Energy Recovery)							
Moving grate incineration	> 50,000 t/a	Mixed municipal waste	638 EUR/t (100,000 t/a)	123 EUR/t**	n.a.	very high	Incineration plant with a simple flue gas treatment and combined heat and power (CHP) utilisation
Sanitary Landfill (Safe Waste Disposal)							
Sanitary Landfill	> 30,000 t/a	Mixed municipal waste	115 EUR/t (50,000 t/a)	24.7 EUR/t	24.7 EUR/t	high	Due to the economy of scale the minimum size of sanitary landfills should be 100 t/d
Landfill rehabilitation	Flexible*	Mixed municipal waste	95.2 EUR/t (39,000 t/a)	95.2 EUR/t	122 EUR/t	low	Average costs based on the dumpsite rehabilitation concept for the Korca region
Inert Waste Management							
Mobile Treatment	> 30,000 t/a	Inert construction and demolition waste	10 EUR/t (50,000 t/a)	5.4 EUR/t**	5.4 EUR/t**	medium	The specific costs without consideration of risk & profit for private operator
Stationery Treatment	> 100,000 t/a	Inert construction and demolition waste	19 EUR/t (100,000 t/a)	4.3 EUR/t**	8.6 EUR/t**	very high	Risk & profit and transport costs for deliver to the plant are not considered in the specific costs
Landfilling	> 2,000 t/a	Inert waste	26 EUR/t (50,000 t/a)	6.0 EUR/t	6.0 EUR/t	medium	The cost calculation is based on the standards of a LC I landifll.

IV Inter-municipal Cooperation for Advanced Waste Management

Definition of Regional Waste Management Activities and Identification of Waste Zones

According to the Albanian legislation the municipalities are responsible for provision of waste management services. Nevertheless, certain elements of an integrated waste management system require large scale solutions for cost effective operations. Because most municipalities in Albania are too small for efficient operation of large scale facilities, cooperation among municipalities respectively a so-called “regionalisation” or zoning is required.

Large scale facilities serving two or more municipalities are called “regional”, although the waste zone (catchment area) of the respective facility might differ from the regional boundaries.

A prerequisite for site identification of regional waste management facilities is the definition of the respective waste zones. In order to define these waste zones, it is important to clarify in a first step, which SWM component/ facility is

- **Regional:** catchment area/ service area preferably more than one municipality
- **Local:** catchment area/ service area usually only one municipality or even only parts of a municipality

The following components will be considered as “regional”:

- Transfer and long-distance transport (in large volume vehicles) after transfer
- Treatment of residual waste (including Mechanical Biological Treatment and Incineration)
- Disposal on sanitary landfills

Other components might be included in the scope of the regional activities based on an analysis of the actual frame conditions. In any case, the private sector can be involved in the different activities.

Transfer Stations for Cost Efficient Long Distance Transport

With the realisation of regional waste management facilities, the transportation distances from the source of waste generation to the future treatment and disposal sites will be extended. Whereas, currently, in Albania it is still common practise that the waste collected in a municipality is disposed on a nearby landfill (dumpsite), in the future the

collected waste might have to be transported to a regional waste management facility in a distance of 50 or even 100 km. As mentioned earlier, the financial advantages of large scale waste treatment facilities [generated in larger catchment areas (waste zones)] have to be balanced with the additional costs for long-distance transportation, which usually is the subject of detailed concept and feasibility studies.

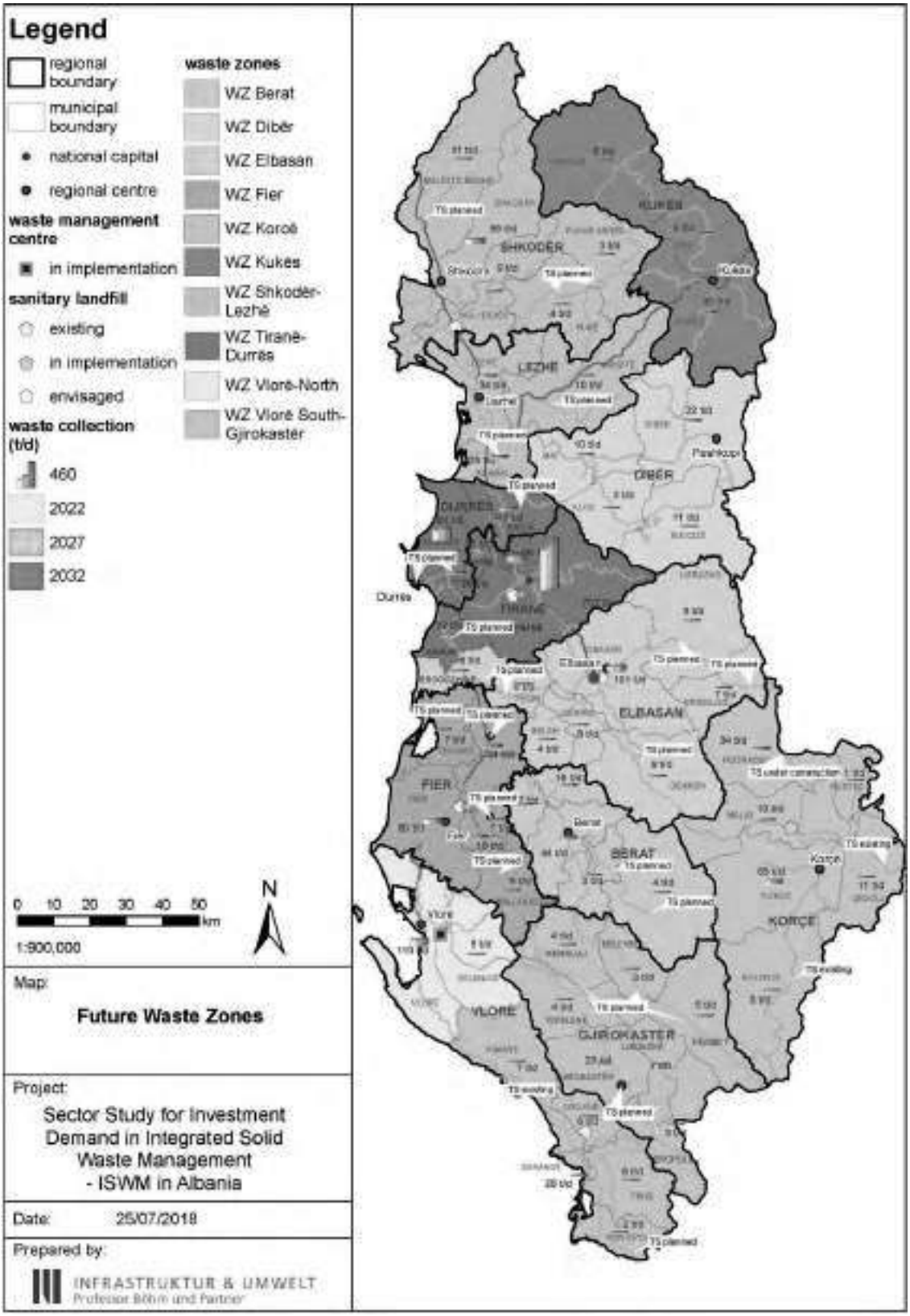
For the purpose of this investment plan a transportation distance of more than 30 km is used as a benchmark to indicate the need for a transfer station. Thus, the investment plan indicates where transfer stations are needed and presents the respective investment costs. The exact locations of the transfer stations should be identified in the scope of detailed waste management planning (e.g. local waste management plans or concept and feasibility studies for SWM projects) or municipal planning (e.g. local development plans).

Waste Zones for Inter-municipal Cooperation

For the whole of Albania, waste zones are defined so that all municipalities are assigned to a specific (existing or planned) regional waste management facility. For defining the waste zones (catchment areas) the existing and planned modern waste disposal facilities including their catchment areas are identified first. Then, the remaining areas are divided into waste zones; these waste zones might deviate from the qark boundaries i.e. because of:

- economic aspects (waste amounts and economy of scale),
- logistics (distances and road conditions, waste amounts to be transported).

All waste zones, both the existing and the new ones, are displayed in the overview map below.



Map of waste zones and regional waste management facilities

Sustainable Operation of Regional Waste Management Facilities

According to the Albanian legislation the municipalities are responsible for provision of waste management services. Law No. 139/2015 on Local Self-Government defines the functions of the municipalities and also describes the ways, how local services should be managed. Local self-government units shall ensure the delivery of public services through one or more of the following instruments:

- Their own organizational units
- Enterprises for public services
- Conclusion of contracts with third parties
- Use of appropriate instruments of public and private partnerships

Chapter V of the Law No. 139/2015 on Local Self-Government addresses the cooperation among municipalities. In Article 14, No. 5 it is specified that:

„*Two or more local self-government units within a region or from different regions may conclude agreements among themselves or with the central government institutions for the creation of a juridical person separated from the parties to whom they grant authority and specific powers. In the meaning of this Law, such juridical person shall be called Joint Powers Authority."*

This "Joint Powers Authority" could for example be established as a shareholder company, such as the Korca Regional Waste Management Company. Besides the municipalities, the law also makes provision for "Central Government Institutions" to join in. For the management of services the Joint Powers Authority could also engage private sector companies or establish PPPs.

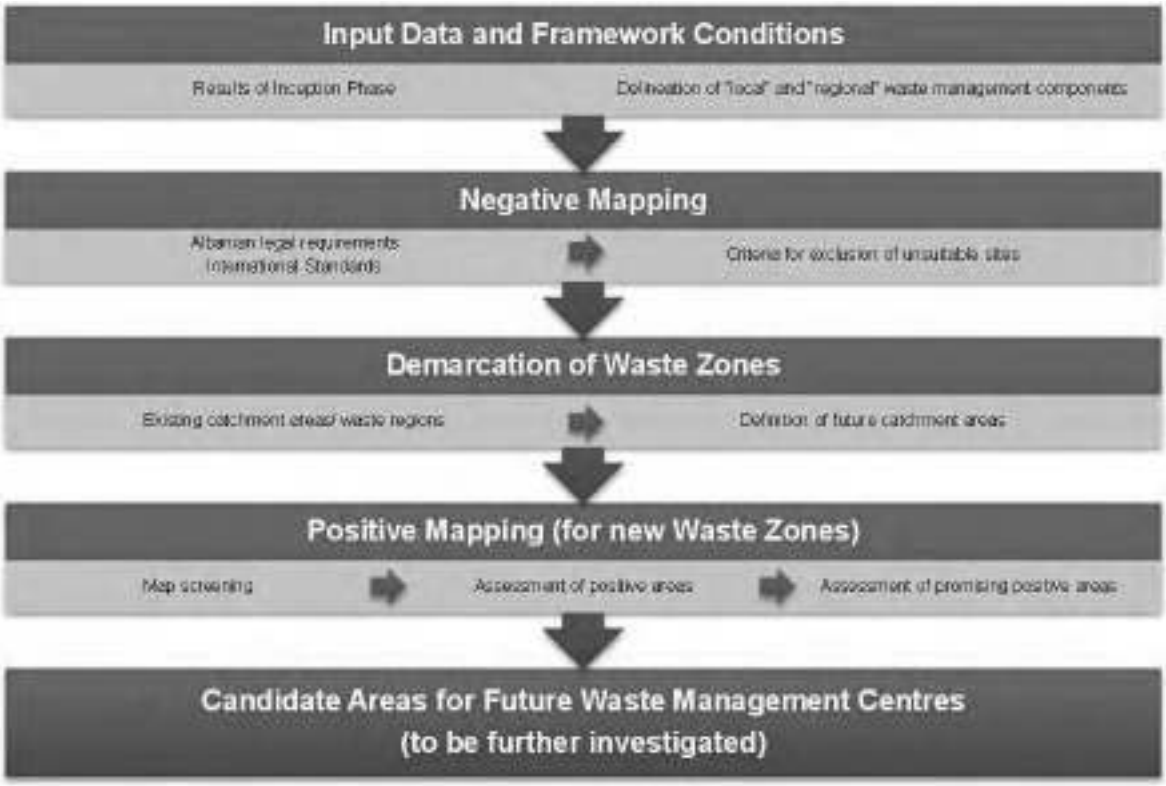
Summarizing, Law No. 139/2015 provides a frame to establish enterprises, where besides the municipalities of the respective waste zone also other partners, such as central government institutions or private companies could be included. As the current experience in Korçë shows, the establishment of such a regional company is quite challenging and time consuming.

Another solution, which complies with the stipulations of Law No. 139/2015, would be that one municipality takes over the responsibility for the regional facilities and concludes bilateral contracts with other municipalities in the waste zone. The weakness of this model is that one municipality has to be willing and able to take over the full risk of the regional facility. Therefore, this model is considered only valuable in exceptional cases.

V GIS Mapping and Identification of Locations for Regional Waste Management Facilities

Potential locations for sanitary landfills and other waste treatment facilities were identified for waste zones without an agreed location for such facility. The working steps conducted for site identification are shown in the figure below.

Working steps for identification of locations for Regional Waste Management Centres



For the purpose of the site identification a GIS data base has been prepared covering all of Albania. In the negative mapping, based on the requirements set by the legislation and standards, criteria for the exclusion of unsuitable areas were compiled.

In the remaining (not excluded) areas a positive mapping was carried out to identify suitable areas for the implementation of a regional waste management centre. The results of this exercise are candidate areas for the future waste management centres as well as aspects to be considered in further investigations required for final site selection for a potential investment project. These data and information are also available as GIS layer and data base.

VI Investment Planning

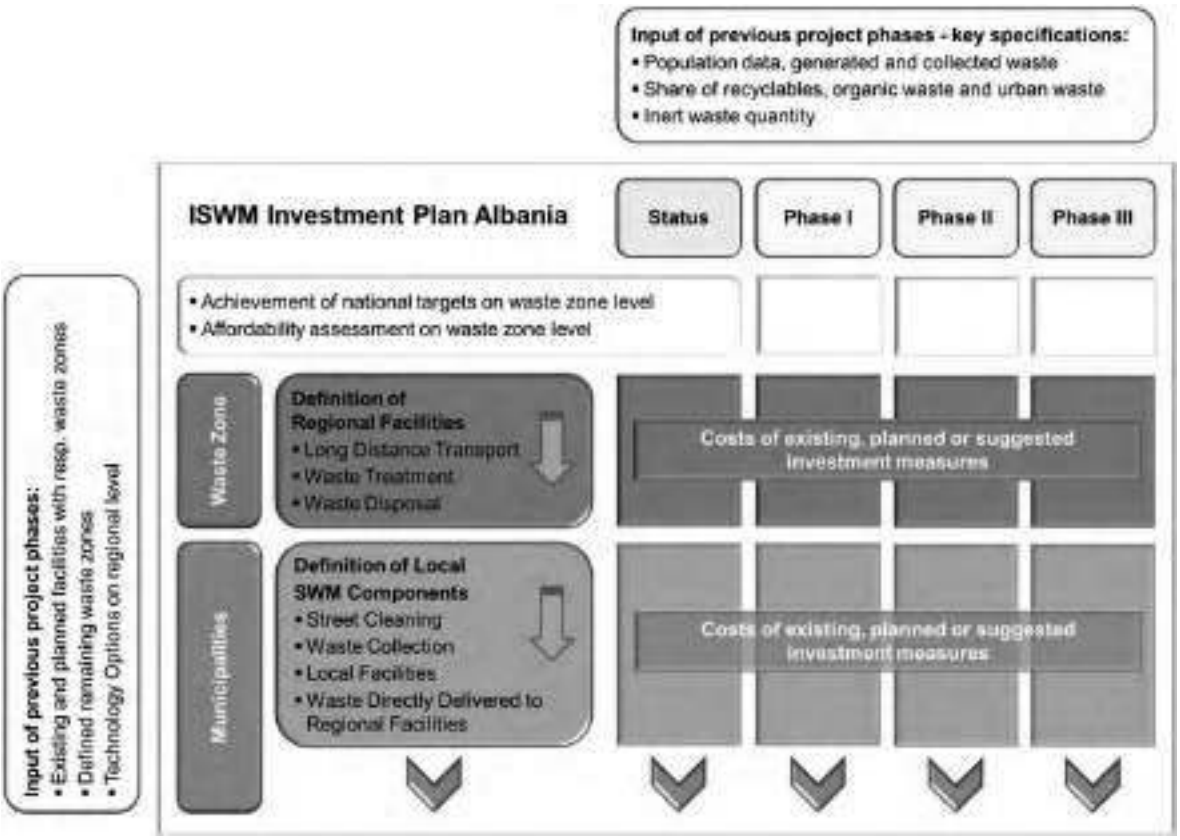
The Integrated Solid Waste Management – Investment Planning Tool (ISWM-IPT)

The core element of the investment planning is the Integrated Solid Waste Management – Investment Planning Tool (ISWM-IPT); the future investments on the regional and local level are considered by applying this interactive tool.

The planning horizon is divided into three phases: Phase 1: 2018 - 2022, Phase 2: 2023 - 2027, Phase 3: 2028 - 2032.

The following figure illustrates the basic scheme of the ISWM-IPT Albania.

Basic scheme of the ISWM Investment Planning Tool



Investment Plan

The following table presents the summary of the planned new regional facilities which shall be implemented in the three phases.

	Regional Facilities/ Waste Zones	WZ Berat	WZ Dibër	WZ Fier	WZ Elbasan	WZ Korçë	WZ Kukës	WZ Shkodër-Lezhë	WZ Tirane-Durrës	WZ Vlorë North	WZ Vlorë South-Gjirokastër	Total
PHASE 1 (2018 - 2022)	Long Distance Transport											
	Ramp type transfer station	400,000		800,000	800,000			800,000	1,594,000		600,000	**4,994,000**
	Ramp type TS with compaction											
	Waste Treatment											
	Dirty MRF								1,650,000	4,200,000		**5,850,000**
	MBT with AD											
	MBT with stabilisation											
	MBT with composting											
	Anaerobic Digestion (AD)											
	Moving grate incineration			25,512,000					76,001,000			**101,513,000**
	Waste Disposal											
	Controlled Landfill		1,000,000				750,000					**1,750,000**
	Sanitary Landfill	3,673,000		3,000,000				3,467,000	22,585,000	6,800,000	2,283,000	**41,808,000**
	Total Phase 1 (2018 - 2022)	**4,073,000**	**1,000,000**	**29,312,000**	**800,000**		**750,000**	**4,267,000**	**101,830,000**	**11,000,000**	**2,883,000**	**155,915,000**
PHASE 2 (2023 - 2027)	Long Distance Transport											
	Ramp type transfer station											
	Ramp type TS with compaction											
	Waste Treatment											
	Dirty MRF											
	MBT with AD											
	MBT with stabilisation					11,100,000		14,848,000				**25,948,000**
	MBT with composting	5,067,000								7,373,000	6,207,000	**18,647,000**
	Anaerobic Digestion (AD)											
	Moving grate incineration											
	Waste Disposal											
	Controlled Landfill											
	Sanitary Landfill			4,567,000	4,342,000	3,377,000		5,479,000			2,509,000	**20,274,000**
	Total Phase 2 (2023 - 2027)	**5,067,000**		**4,567,000**	**4,342,000**	**14,477,000**		**20,327,000**		**7,373,000**	**8,716,000**	**64,869,000**
PHASE 3 (2028 - 2032)	Long Distance Transport											
	Ramp type transfer station											
	Ramp type TS with compaction											
	Waste Treatment											
	Dirty MRF											
	MBT with AD											
	MBT with stabilisation											
	MBT with composting											
	Anaerobic Digestion (AD)											
	Moving grate incineration											
	Waste Disposal											
	Controlled Landfill		421,000				288,000					**709,000**
	Sanitary Landfill	2,131,000		4,968,000	4,732,000	3,577,000		5,873,000		3,456,000	2,727,000	**27,464,000**
	Total Phase 3 (2028 - 2032)	**2,131,000**	**421,000**	**4,968,000**	**4,732,000**	**3,577,000**	**288,000**	**5,873,000**		**3,456,000**	**2,727,000**	**28,173,000**

Summary of the estimated investment costs for new regional facilities per waste zone and planning phase [EUR]

In the next table, the estimated investment costs (for local and regional investments) are shown for each waste zone, and for the country wide initiative for dumpsite risk mitigation.

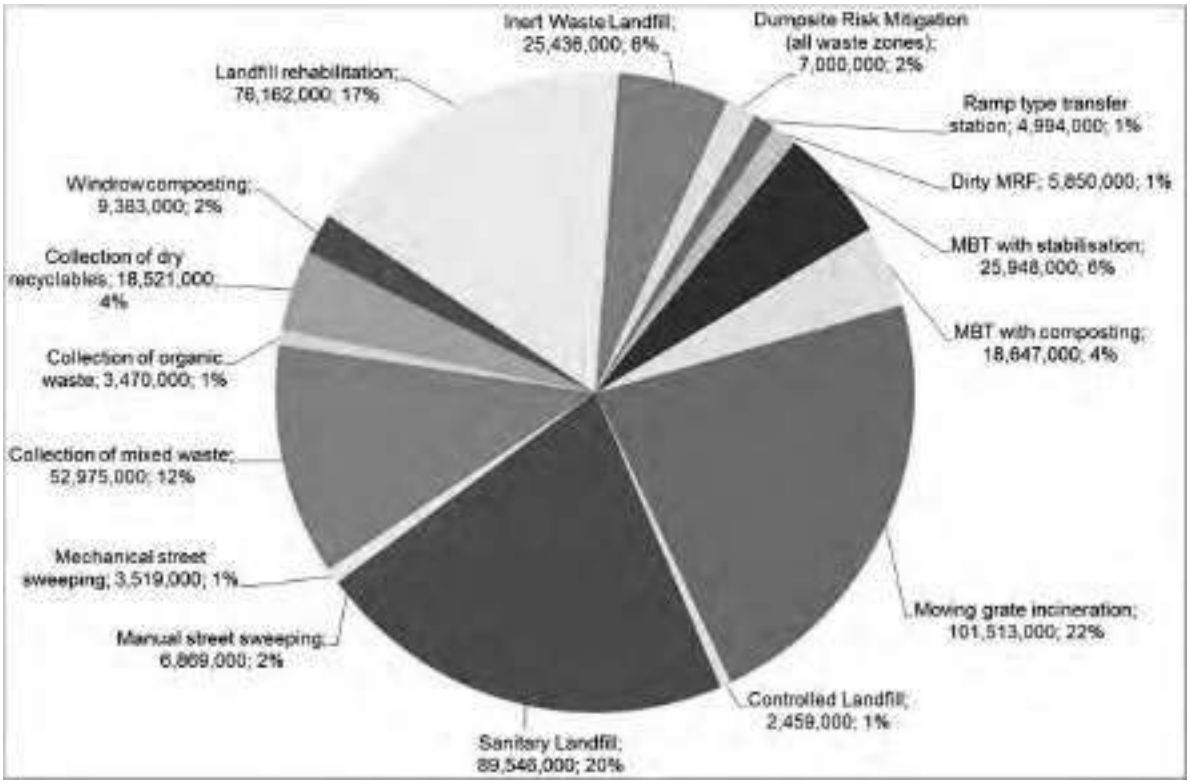
Summary of the estimated investment costs per waste zone and planning phase [EUR]

Waste Zone	Phase 1	Phase 2	Phase 3	Total
WZ Berat	5,497,000	7,608,000	6,871,000	**19,976,000**
Regional investment costs	*4,073,000*	*5,067,000*	*2,131,000*	*11,271,000*
Local investment costs	*1,424,000*	*2,541,000*	*4,740,000*	*8,705,000*
WZ Dibër	1,773,000	3,012,000	1,910,000	**6,695,000**
Regional investment costs	*1,000,000*		*421,000*	*1,421,000*
Local investment costs	*773,000*	*3,012,000*	*1,489,000*	*5,274,000*
WZ Fier	32,303,000	8,933,000	15,128,000	**56,364,000**
Regional investment costs	*29,312,000*	*4,567,000*	*4,968,000*	*38,847,000*
Local investment costs	*2,991,000*	*4,366,000*	*10,160,000*	*17,517,000*
WZ Elbasan	3,587,000	6,698,000	10,730,000	**21,015,000**
Regional investment costs	*800,000*	*4,342,000*	*4,732,000*	*9,874,000*
Local investment costs	*2,787,000*	*2,356,000*	*5,998,000*	*11,141,000*
WZ Korçë	4,923,000	20,500,000	6,870,000	**32,293,000**
Regional investment costs		*14,477,000*	*3,577,000*	*18,054,000*
Local investment costs	*4,923,000*	*6,023,000*	*3,293,000*	*14,239,000*
WZ Kukës	1,354,000	2,081,000	1,334,000	**4,769,000**
Regional investment costs	*750,000*		*288,000*	*1,038,000*
Local investment costs	*604,000*	*2,081,000*	*1,046,000*	*3,731,000*
WZ Shkodër-Lezhë	7,914,400	25,541,000	14,085,000	**47,540,400**
Regional investment costs	*4,266,400*	*20,327,000*	*5,873,000*	*30,466,400*
Local investment costs	*3,648,000*	*5,214,000*	*8,212,000*	*17,074,000*
WZ Tirane-Durrës	133,420,900	26,829,000	35,796,000	**196,045,900**
Regional investment costs	*101,829,900*			*101,829,900*
Local investment costs	*31,591,000*	*26,829,000*	*35,796,000*	*94,216,000*
WZ Vlorë North	16,200,000	12,101,000	6,966,000	**35,267,000**
Regional investment costs	*11,000,000*	*7,373,000*	*3,456,000*	*21,829,000*
Local investment costs	*5,200,000*	*4,728,000*	*3,510,000*	*13,438,000*
WZ Vlorë South-Gjirokastër	5,232,400	13,047,000	7,046,000	**25,325,400**
Regional investment costs	*2,882,400*	*8,716,000*	*2,727,000*	*14,325,400*
Local investment costs	*2,350,000*	*4,331,000*	*4,319,000*	*11,000,000*
Dumpsite Risk Mitigation (all waste zones)	7,000,000			**7,000,000**
Albania	**219,205,000**	**126,350,000**	**106,736,000**	**452,291,000**
Regional investment costs	*162,914,000*	*64,869,000*	*28,173,000*	***255,956,000***
Local investment costs	*56,291,000*	*61,481,000*	*78,563,000*	***196,335,000***

In the Waste Zone Tirane-Durrës as well as in the Waste Zone Fier, the investment costs of the regional facilities as well as part of the costs of the landfill rehabilitation within the local investment costs will be covered by a private investor in the framework of concession contracts.

The total investment requirements until the end of the planning horizon (2032) will be about 256 Mio EUR for regional investments and 196 million EUR for local investments. Consequently for the entire country in total 452 million EUR will be required for the investments in the SWM sector until end of 2032. At the local level, the municipalities will have to cover a considerable amount of investment costs for the extension of collection services, implementation of separate collection and inert waste management, and especially for the closure and rehabilitation of existing dumpsites.

The following figure summarises the total regional and local investment costs until 2032 and shows the percentage of investment costs for each component of the ISWM system in total costs.



Share and value of investment costs for each ISWM component [EUR]

The orange colours indicate the investments for local SWM components, while the investment costs shown in blue colours are related to the regional facilities.

The annual average operating costs in the three planning phases of the regional facilities and local components are presented in the following table.

Total annual operating costs of the regional facilities and local components [EUR/a][1]

Total operating costs	Currency EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	1,099,000	1,116,000	1,179,000
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF	-67,000		
MBT with AD			
MBT with stabilisation		3,848,000	3,557,000
MBT with composting		3,462,000	3,163,000
Anaerobic Digestion (AD)			
Moving grate incineration	11,657,000	13,306,000	15,147,000
Waste Disposal			
Controlled Landfill	155,000	137,000	128,000
Sanitary Landfill	1,677,000	546,000	538,000
Total Operating Costs for Regional Facilities*	**14,521,000**	**22,415,000**	**23,712,000**

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	5,005,800	5,669,600	6,407,200
Mechanical street sweeping	524,000	870,100	1,285,900
Waste Collection			
Collection of mixed waste	7,818,700	7,979,100	8,485,700
Collection of organic waste	75,100	579,400	945,300
Collection of dry recyclables	566,200	1,163,100	1,451,300
Local Facilities			
Clean MRF			
Windrow composting	31,300	247,500	402,200
Fully automated in-house composting plant			
Landfill rehabilitation	100,500	111,500	191,800
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	712,700	1,060,000	1,465,500
Total Operating Costs for Local Facilities	**14,835,000**	**17,681,000**	**20,635,000**

Grand Total Operating Costs	**29,356,000**	**40,096,000**	**44,347,000**

[1] The operating costs of the incineration only include the costs in Tiranë which are based on the gate fee. The incineration costs in Elbasan and Fier in Phase 1 are considered as zero, while the costs in Phase 2 and 3 are not known. Thus the total operating costs for regional costs in Phase 2 and 3 are without potential operating costs for incinerators in Elbasan and Fier.

The operating costs of the regional facilities will considerably increase with the implementation of new waste treatment facilities. Further increases in operating costs are expected in Phase 3 due to increased waste quantities to be treated and disposed. The operating costs of the incineration plants in Elbasan and Fier are currently not known so that the total operating costs for all regional facilities cannot be estimated.

With regard to local SWM components, the increases in operating costs are related to the increased waste quantities to be handled over the years as well as the strengthening of separate collection and resource recovery.

At regional and local level, an average of about 29 million EUR should annually be spent during phase 1 to cover the operating costs of the ISWM system. Towards the end of the planning horizon, these costs will increase to approx. 44 million EUR per annum.

Up-dating of the Investment Plan

Taking into account that SWM is a rapidly developing sector in Albania, the ISWM Investment Plan can be seen as a living document. Therefore, the proposed measures and other developments in the SWM sector shall be monitored to regularly update the plan. The Investment Plan can be actualised at any time if changes in the SWM sector are known. However, a review should be done at least once a year, preferably timely before the budget decision for the next financial year.

VII Tariff Implications and Affordability

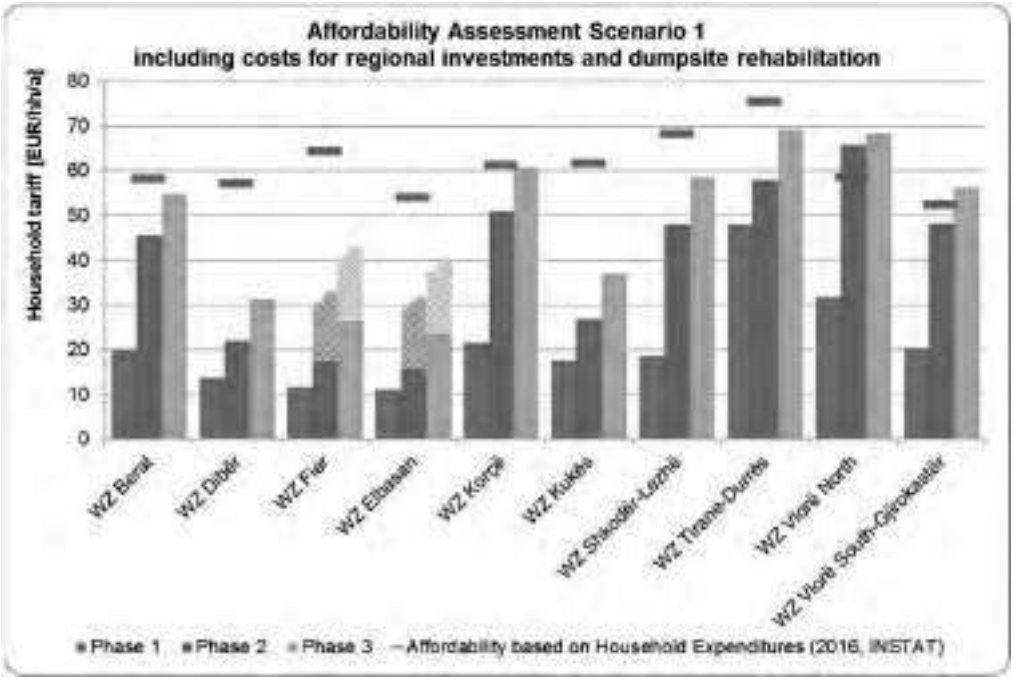
The required tariffs for households are calculated for the local and regional waste management activities presented in the previous chapters, based on the following assumptions:

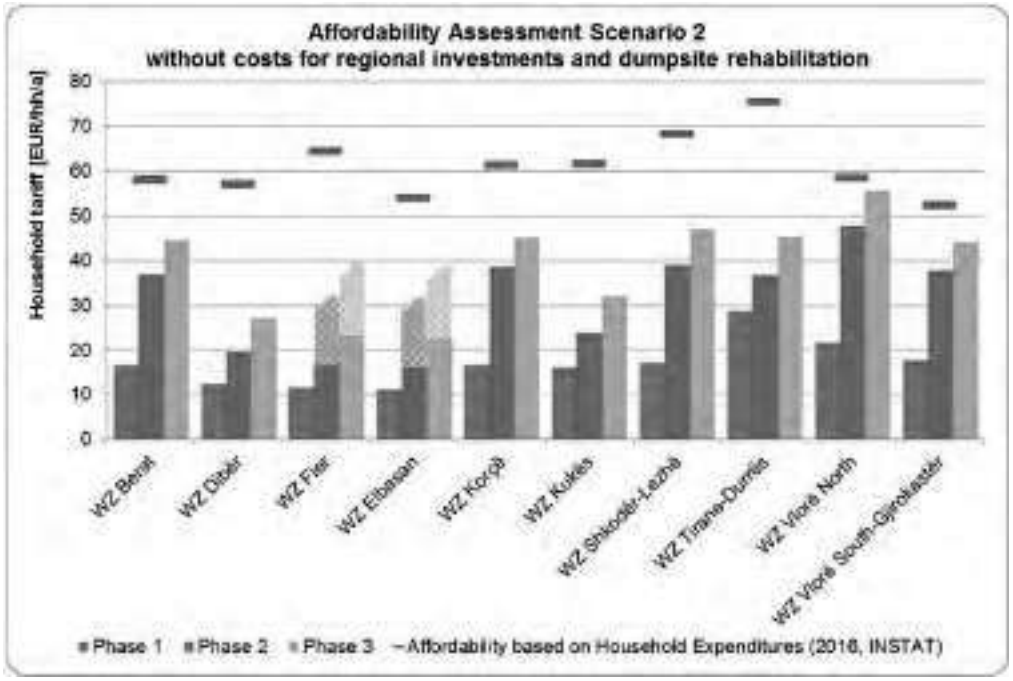
- 80% of the waste management costs will be financed by households and 20% by the commercial entities
- Payment of fees is assumed from all households

In addition, two scenarios have been prepared which vary regarding the consideration of investment costs for regional measures as well as the costs for dumpsite rehabilitation in the tariff calculation. The first scenario assumes that these costs will be covered by the tariff while the second scenario assumes that they can be covered from other sources. With the assumptions mentioned above, tariffs in the first and second scenarios are compared with the maximum affordable tariff. For defining the maximum affordable tariff

1% of the annual expenditure per household in 2016 as published by INSTAT is considered.

The diagonal stripes are added to WZ Fier and WZ Elbasan, since the operating costs of the regional facilities after the end of the concession contracts are not yet known. For the Waste Zone Tiranë-Durrës it is estimated in the second scenario that the costs of the concession contract consist of 70 % investment costs and 30 % operational costs.





Taking the estimated tariffs as presented in the figures above as well as the low fee collection rates in many municipalities into consideration, the tariffs should considerably be increased to implement sustainable SWM systems.

Since a sharp increase of the tariffs may not be accepted by the population, the tariffs need to be increased stepwise.

As a precondition for implementing cost covering tariffs, the municipalities have to be able to calculate their actual waste management costs as well as estimate the future costs and the developments in population/ waste quantities. This can only be done with proper financial and performance monitoring systems. In this respect, the municipalities should strengthen their managerial /administrative capacities and at the same time implement technical systems allowing such monitoring processes.

VIII Prioritisation of Regional Investment Measures

In parallel to the identification of the investment measures a methodology for prioritizing the planned investments has been developed. The prioritization focuses on the following main issues:

- Identification of criteria for prioritization of investment measures for municipal solid waste management
- Identification of indicators and source data (which are available or can be generated with reasonable effort) for measuring the selected criteria
- Development of a transparent and comprehensible methodology for prioritization (merging of criteria and weighing)

Five criteria are defined, against which the priority of an investment measure is assessed. Each criterion relates to an objective and is described by one or more indicators. These indicators measure the status and changes in quantitative, qualitative and descriptive terms. The criteria used for prioritization are:

I. Impact of the investment
II. Extend to which the project contributes to a clean and healthy environment
III. Availability of institutional structures for sustainable operation
IV. Performance and financial sustainability of regional waste management services
V. Performance and financial sustainability of local waste management services

The first three criteria have been used for prioritization of the investment measures in the waste zones, because the assessment can be conducted based on available information. The maximum points to be achieved are 100. Criteria IV and V shall be added later on, once regional waste management services are available in all waste zones, and appropriate monitoring and reporting systems are introduced in all municipalities.

In the tables below the prioritization system is applied to the regional investment measures in the waste zones for phase 1. Based on the results of the assessment each investment measure/ project receives a certain number of points, indicating its priority. Projects with already acquired funding have the highest priority (100 points).

The prioritization system is not applied to the construction of new landfill cells. The timing of these investments is dependent on the filled respectively still available landfill volume of the existing landfill cells.

Results of prioritization of regional investment measures for phase 1

Waste Zone	Regional Investment Measure in Phase 1 (2018-2022)	Investment [EUR]	Result of Prioritization	
			Rating	Ranking
WZ Fier	Moving grate incineration	25,512,000	100	1
WZ Fier	Sanitary Landfill	3,000,000	100	1
WZ Tirane-Durrës	Dirty MRF	1,650,000	100	1
WZ Tirane-Durrës	Moving grate incineration	76,001,000	100	1
WZ Tirane-Durrës	Sanitary Landfill	22,585,000	100	1
WZ Vlorë North	Dirty MRF	4,200,000	100	1
WZ Vlorë North	Sanitary Landfill	6,800,000	100	1
WZ Shkodër-Lezhë	Sanitary Landfill	3,467,000	85	8
WZ Shkodër-Lezhë	Ramp type transfer stations	800,000	85	9
WZ Vlorë South-Gjirokastër	Sanitary Landfill	2,283,000	83	10
WZ Elbasan	Ramp type transfer stations	800,000	82	11
WZ Tirane-Durrës	Ramp type transfer stations	1,594,000	68	12
WZ Vlorë South-Gjirokastër	Ramp type transfer stations	600,000	67	13
WZ Fier	Ramp type transfer stations	800,000	56	14
WZ Kukës	Controlled Landfill	750,000	50	15
WZ Berat	Sanitary Landfill	3,673,000	48	16
WZ Berat	Ramp type transfer stations	3,673,000	48	17
WZ Dibër	Controlled Landfill	1,000,000	44	18

The result of the prioritization over the three phases is presented in the following table.

Results of the prioritization for regional investment measures over the three phases (without construction of new landfill cells)

WASTE ZONE and INVESTMENT MEASURES	Investment [EUR]	CRITERIA			Total points	Ranking
		Impact of the investment	Contribution to clean and healthy environment	Availability of regional institutional structures		
WZ Berat						
Ramp type transfer stations	400,000	8	40	0	**48**	**17**
MBT with composting	5,067,000	8	0	0	**8**	**23**
Sanitary Landfill	3,673,000	8	40	0	**48**	**16**
WZ Dibër						
Controlled Landfill	1,000,000	4	40	0	**44**	**18**
WZ Elbasan						
Ramp type transfer stations	800,000	32	40	10	**82**	**11**
WZ Fier						
Ramp type transfer station	800,000	36	20	0	**56**	**14**
Moving grate incineration	25,512,000				**100**	**1**
Sanitary Landfill	3,000,000				**100**	**1**
WZ Korçë						
MBT with stabilisation	11,100,000	16	0	20	**36**	**19**
WZ Kukës						
Controlled Landfill	750,000	10	40	0	**50**	**15**
WZ Shkodër-Lezhë						
Ramp type transfer station	800,000	40	40	5	**85**	**9**
MBT with stabilisation	14,848,000	24	0	5	**29**	**20**
Sanitary Landfill	3,467,000	40	40	5	**85**	**8**
WZ Tirane-Durrës						
Ramp type transfer station	1,594,000	28	40	0	**68**	**12**
Dirty MRF	1,650,000				**100**	**1**
Moving grate incineration	76,001,000				**100**	**1**
Sanitary Landfill	22,585,000				**100**	**1**
WZ Vlorë North						
Dirty MRF	4,200,000				**100**	**1**
MBT with composting	7,373,000	14	0	0	**14**	**22**
Sanitary Landfill	6,800,000				**100**	**1**
WZ Vlorë South-Gjirokastër						
Sanitary Landfill	2,283,000	28	40	15	**83**	**10**
Ramp type transfer station	600,000	12	40	15	**67**	**13**
MBT with composting	6,207,000	12	0	15	**27**	**21**

The prioritization needs regular update (e.g. once a year prior to budgeting) in order to consider the actual developments.

9.2 Annex 2: Workshops of the Inter-ministerial Working Group during Preparation of the Sector Study[3]

Nr.	Date	Workshop Name
1	07. March 17	Kick-off Meeting
2	25. May17	Workshop for Presentation and Discussion of the Preliminary Results of the Inception Phase
3	26. July 17	Workshop for Presentation and Discussion of the Preliminary Results of the Technology Development Phase
4	05. Dec 17	Workshop for Presentation and Discussion of the Preliminary Results of the Site Identification and Investment Planning Phase
5	10.+11. Jan 18	Workshop for Investment Plan
6	07. March 18	Workshop for Presentation and Discussion of the Consolidated Investment Costs Report
7	24. April 18	Workshop for Presentation and Discussion of the Results of the Prioritization Phase
8	06. June 18	Workshop for Presentation and Discussion of the Final Results of the ISWM Investment Plan

[3] Minutes of Meeting including participants lists are available for each of the workshops

9.3 Annex 3: Minutes of Waste Area Meetings

9.3.1 Annex 3.1: Minutes of Waste Zone Meeting Berat

Meeting Notes

Project:	Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management in Albania
Theme/objective:	Waste Zone meeting Berat local stakeholders
Location:	Berat municipality meeting room
Date:	Monday, 2 July 2018
Time:	See Agenda (Annex 1)
Participants:	See participants list (Annex 2)
Distribution list:	Ministry of Infrastructure and Energy (MoIE) Ministry of Tourism and Environment (MoTE) KfW Development Bank Consultant
Author:	Consultant
Annexes:	1. Agenda 2. Participants List 3. Presentation

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BLZ 100 100 10

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1 Welcome Notes

The meeting started with opening remarks from the Prefect of Berat and Isa Memia (MoIE). Participants were self-introduced (the list of participants and contact details are enclosed as Annex 2 to the Meeting Notes).

Gernod Dilewski (IU) welcomed all participants on behalf of the Consultant.

2 Presentation of the Draft ISWM Master Plan

The Consultant presented the following four topics, related to the overall development of the Master Plan and focusing in depth on the particularities of Berat Waste Zone:

1. Background of the ISWM Master Plan
2. Planning Criteria for the preparation of the Investment Plan
3. Proposed Waste Zone
4. Consolidated Investment Measures for Berat Waste Zone

Further details are provided in the presentation attached in Annex 3. Throughout the presentation, the participants were invited to provide comments and feedback.

3 Discussion of ISWM Master Plan and Consolidated Investment Measures for Berat Waste Zone

Berat Prefect

- Berat Prefect welcomes the participants
- In the framework of the strategy of tourism, impact of waste activities is meaningful for the whole region
- Our region demands a long term solution
- The deputy mayors should have been present in this meeting

Isa Memia

- 10 waste zones are delineated for the country
- Cooperation is necessary for regional waste management facilities, to make them affordable
- Based on the SECO-funded project a feasibility study will be carried out, to further define the details for Berat Waste Zone
- A preliminary draft is presented today, therefore your comments are welcomed
- Procedures started today are aligned with the SEA

- Representation of municipalities was expected at a higher level
- Further comments can be sent in writing, based on the presentation and the previously received material, to the MoIE

Eduard Rumani, Swiss Embassy:

- Provided an overview of the upcoming SECO intervention in Berat Qark / Waste zone, including 2 years planning phase with short-term measures that will be the benchmark for the further support of regional waste management

Prefecture Environmental Specialist:

- In addition to the transfer stations envisaged for Poliçan and Skrapar, how are the recycling and composting fractions taken out of the waste? Is it planned to have them done separately by municipalities or a shared facility?

Gernod Dilewski

- Activities that need advanced technology and space are defined as regional activity, while simple separation and green waste composting can be carried out as a local activity

Skrapar Municipality

We agree with the concept and we understand it all, but this is difficult to accomplish

- We have the biggest territory in the region, 775 km²
- Currently facing difficulties to cover even with the service provision for collection
- Road infrastructure is missing

Isa Memia

- We are aware of the difficulties
- Several municipalities have difficulties to cover the cost
- Waste management is a municipal responsibility
- GoA is taking over the investment cost for the regional investment and partially the local costs for the rehabilitation of current dump sites
- If these areas have tourism as a priority waste management should be taken more seriously
- Costs outlined in the study remain within the affordability margin
- Inhabitants should be aware that they need to protect the environment
- Municipalities should raise awareness of themselves and also of the inhabitants
- Regional solutions are much more affordable than individual municipal solutions, if standards are respected

Skrapar Municipality

- Budget is divided based on number of pupils and population size, which does not reflect the area we need to cover with service
- We have a very good service for waste collection but we do not have the possibility of final treatment

Berat Prefect

- Skrapar Municipality mentioned that they have a big territory

- I believe since it has a big area without much population, should be the first to start in the rural areas to divide the waste at source
- The farmers themselves know what is green waste that can be composted

Isa Memia

- In rural areas there is envisaged only one bin / stream
- For the urban areas we have 2 bins, which was legally initially requested 4 bins / waste streams
- Draft strategy has 2 waste stream separation demand
- Rural areas will also be encouraged for composting

Gernod Dilewski

- There will be local waste management plans and all municipalities will have a discussion on what is feasible
- Financial possibilities will be considered as part of this waste management planning
- Options will be discussed with the municipality
- Waste planning will define what will be carried out and the impact it has regarding costing and fee level
- The situation will be eased for the furthest municipalities given that when a unified tariff is applied the overall long distance transport costs are shared between all municipalities despite the use or not of a transfer station

Berat Municipality

- Is Berat region going to have its own incinerator?

Isa Memia

- The Fier incinerator is one of the options being discussed
- Further details will be elaborated during the detailed feasibility study carried out with the support of SECO
- Waste amounts in Berat are not sufficient for operating its own incinerator
- The municipalities should probably start with the separation
- Dump site emergency rehabilitation is planned
- Municipalities should sensitize the inhabitants
- Tariff policies should also be taken care of

Skrapar Municipality

- We are obliged that until end of December, based on a DCM we should have rehabilitated the current dump sites

Regional Environmental Agency

- Situation is very emergent
- Together with MoTE we have inspected current dump sites and there is an immediate need to have a new landfill
- 2 years ago we had fires in Berat landfill and was impossible to extinguish them
- All the 5 municipal dump sites are by the rivers
- Local government is the pillar and should look into the waste issue more seriously

Berat Prefect

- Good will of municipalities to cooperate was testified by Berat, Ura Vajgurore and Kucova agreeing to deposit jointly
- However, the study concluded that the selected site was incompatible with current requirements

Alba Dakoli Wilson

- Are there any comments that should be reflected in the current Berat Waste Zone Consolidated Investment Measures?

All participants

- Current version is a good starting point
- No further comments
- Details will be added during detailed SECO supported study

4 Closing of the meeting

Berat Prefect closed the meeting, thanking the participants for the input and discussion and the consultant for the quality work and presentation.

INFRASTRUKTUR & UMWELT
2nd July 2018

Gernod Dilewski (Consultant, Team Leader)

Annex 1: Agenda

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner

COWI

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Integrated Solid Waste Management (ISWM) in Albania
Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management

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Public Consultation on the Waste Master Plan and "Strategic Environmental Assessment" pursuant to the Law no. 146/2014, "On Notification and Public Consultation"

Monday, 02 July 2018 (10:00 – 13:30 hours)

Address: Conference Room, Berat Municipality, Blvd. "Republika", Berat, Albania

Background:

KfW has commissioned INFRASTRUKTUR & UMWELT, COWI and FLAG with the implementation of consulting services for the above mentioned project. The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

The specific objectives of the Sector Study are

- to determine the proper methodology and technology for future investments in the SWM sector
- to determine the proper costs and tariffs
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments

- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/or disposal facilities
- to propose the necessary legal and institutional changes
- to propose any other accompanying measures

The workshop is intended to present and discuss

- the consolidated investment measures in each waste zone
- overall costs of “regional” and “local” investments
- operational costs of “regional” and “local” activities, as well as relevant household tariffs

AGENDA

9:45	Registration
10:00	**Welcome note** Ministry of Infrastructure and Energy
10:15	**Welcome note and introduction to the Workshop Objectives** Consultant
10:30	**Self-introduction of Participants**
10:45	**Presentation of the Sector Study for Investment Demand in ISWM (Waste Master Plan)** Consultant
11:30	**Consolidated Investment Measures for Waste Zones** Consultant
12:00	***- Coffee break -***
12:30	**Discussion**
13:20	**Closure of the Meeting** Ministry of Infrastructure and Energy
13:30	***- Working lunch at Hotel Tomori -***

Annex 2: Participants List

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner

COWI

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Integrated Solid Waste Management (ISWM) in Albania
Public Consultation on the Waste Master Plan and the Strategic Environmental Assessment

Monday, 2 July 2018 (10:00-13:30)
Address: Berat City Hall, Berat

No.	Emri/ Name	Mbiemri/ Surname	Pozicioni/ Position	Institucioni/ Institution	Email	Telefon	Konfirmim per pjesemarrje/Confirmation Participation
1	Alba	Dakoli Willen	Dr. Drejtor [illegible]	Flag	flag@flag-al.org	04 270242	+
2	Isa	Memia	Specialist	MIE	[illegible]@infrastruktura.gov.al	067[illegible]	[signature]
3	Anila	Morina	Përgjegjës	MIE	anila.morina@infrastruktura.gov.al		[signature]
4	Deniz	Beshiri	Specialist	MIE	Deniz.Beshiri@infrastruktura.gov.al		[signature]
5	Evgji	Gjymshana	Specialist	Bashkia Berat	evgji_880@hotmail.com	069 5205070	[signature]
6	Endrit	Gungari	Specialist	Bashkia Berat	endrit.engineer@gmail.com	069 938 2922	[signature]
7	Gerdiana	Shegani	Specialist Mjedisi	DRSH Berat	gertashegani@hotmail.com	067[illegible]	[signature]
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10	Hamille	Dafa	Prefekt	Inst. Prefekti Qarkut Berat	hamille.dafa@[illegible].gov.al	0698975838	Po
11	Agur	Prizo	D.R.M.T	Keshilli Qarkut	agurprizo@hotmail.com	068 2091632	[signature]
12	Malvina	Lila	Specialist	Kesh. Qarkut		069 4716585	[signature]
13	Petrit	Toli	Drejtor DRM	DRM Berat	toli[illegible]@[illegible]	0697762872	[signature]

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner
COWI
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Integrated Solid Waste Management (ISWM) in Albania
Public Consultation on the Waste Master Plan and the Strategic Environmental Assessment

Monday, 2 July 2018 (10:00-13:30)
Address: Berat City Hall, Berat

No.	Emri/ Name	Mbiemri/ Surname	Pozicioni/ Position	Institucioni/ Institution	Email	Telefon	Konfirmimi per dreke/confirmation for lunch
14	Eduart	Rumani	[illegible] / Koordinator - [illegible] →		eduart.rumani@[illegible]		
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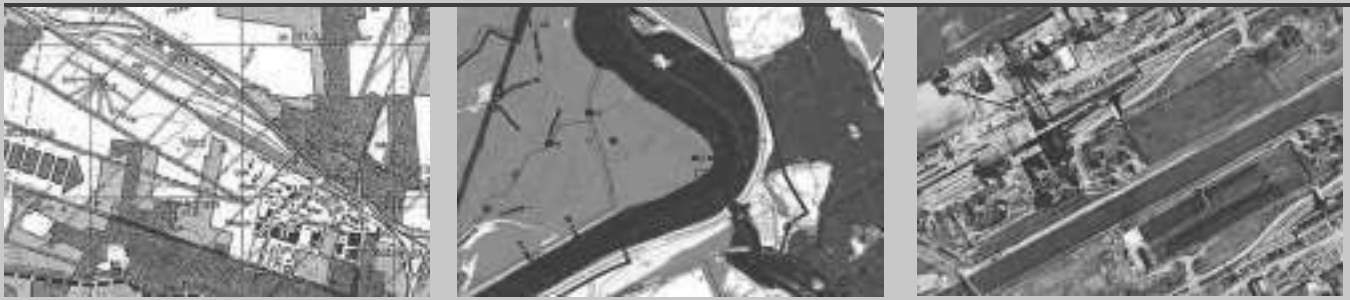
Annex 3: Presentation

THINK CREATIVELY | PLAN FLEXIBLY | IMPLEMENT RELIABLY



Integrated Solid Waste Management in Albania -
Sector Study for Investment Demand (ISWM Masterplan)

Consultation Meeting with Local Stakeholders
Waste Zone Berat

Berat, 2 July 2018

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner

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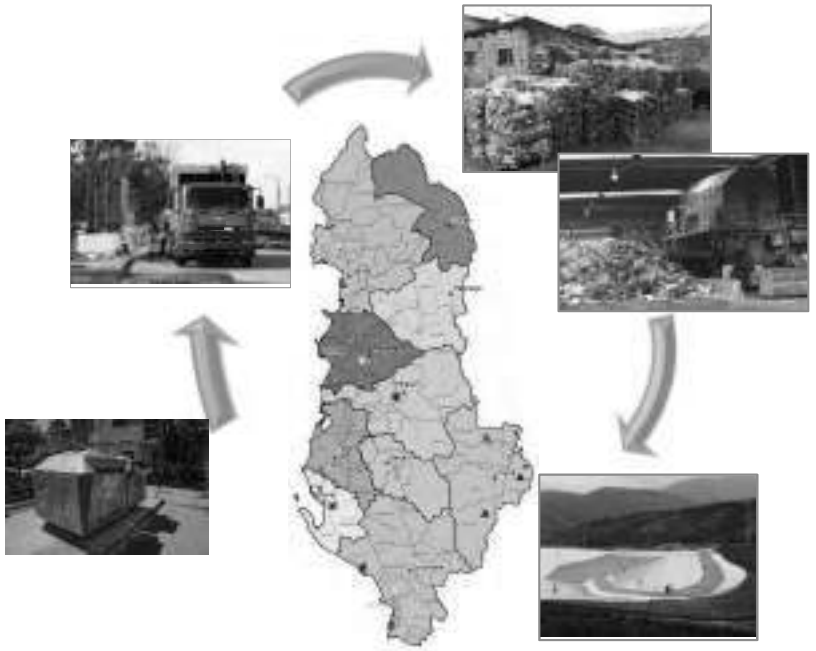
Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Berat



Background of the ISWM Masterplan

The Sector Study for Investment Demand for Integrated Waste Management in Albania is

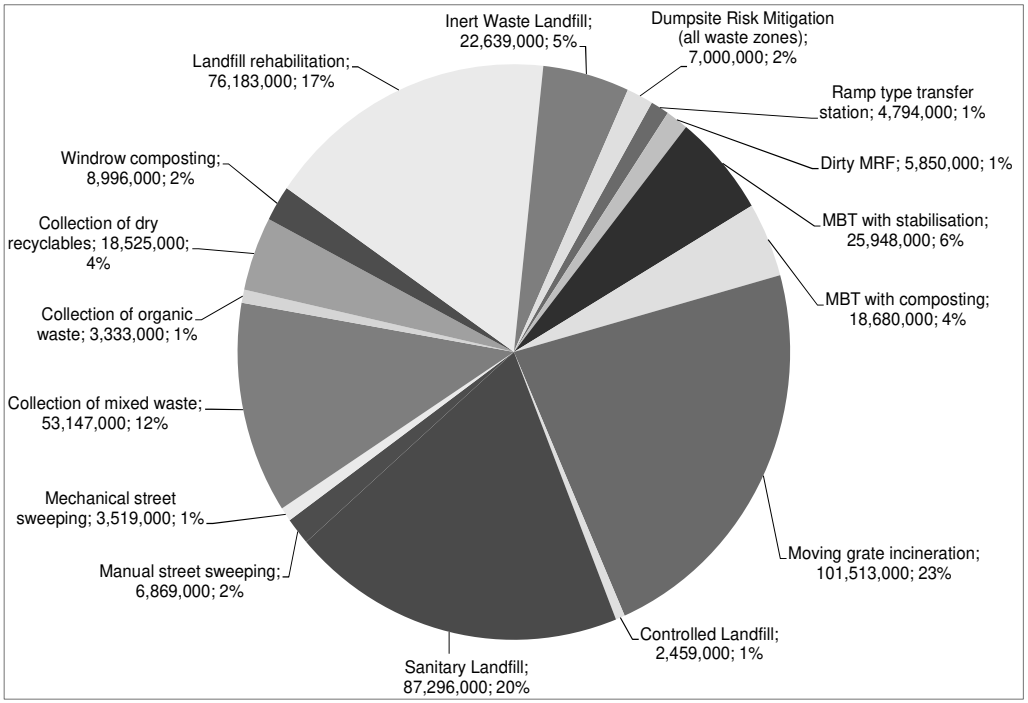
- prepared by the Ministry of Infrastructure and Energy (MoIE)

- financed by the German Development Bank KfW

KFW

Background of the ISWM Masterplan

- Main objectives:
  - to determine the proper methodology and technology for future investments in the SWM sector
  - to determine the proper costs and tariffs
  - to provide a phased investment plan for local and regional ISWM infrastructure
  - to propose necessary legal and institutional changes



Background of the ISWM Masterplan

- All regions have been visited at the start of the project in the first half of 2017, to discuss
  - the current situation of waste management services
  - main challenges
  - ongoing plans and initiatives

- An inter-ministerial working group has been established with representatives from MoIE and MoTE for the preparation of the ISWM Masterplan

- The Draft ISWM Masterplan will now be discussed with stakeholders before preparation of the final version of the Masterplan

Background of the ISWM Masterplan

The main purpose of the today's meeting is to give the municipalities the opportunity to comment on the

- proposed **waste zones** and
- foreseen **investment measures for regional investment**

in order to consider the opinion of the municipalities in the preparation of the final **ISWM Masterplan**

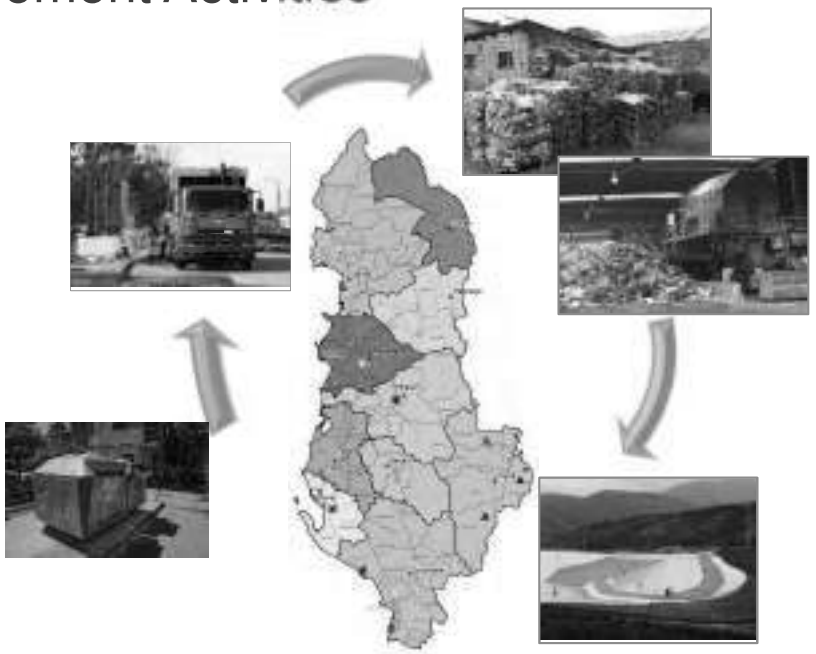
Content of the Presentation

1. Background of the ISWM Masterplan

2. Planning Criteria
   - Key Areas for Improved Waste Management
   - Economy of Scale
   - Regional and Local Waste Management Activities

3. Proposed Waste Zones

4. Waste Zone Berat

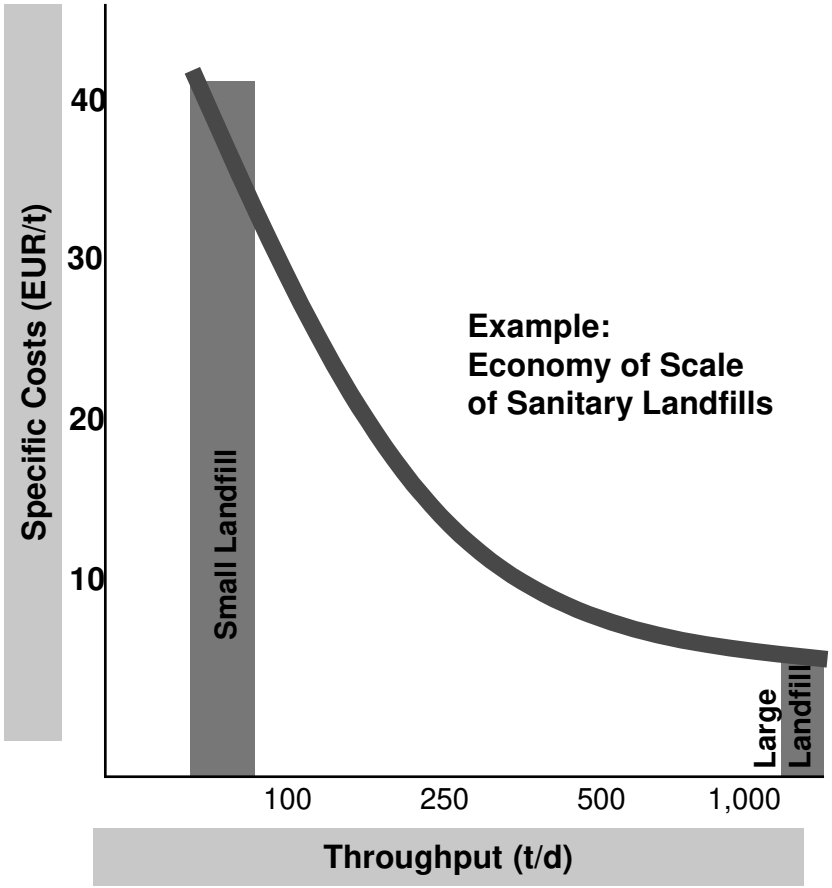


Key Areas for Improved Waste Management

- Besides improvement of **waste collection** and **disposal**, Albania as an EU candidate country is obliged to comply with **EU standards for SWM**.
- These have been transferred into Albanian legislation and focus on **waste recovery** and **treatment**
  - Recovery and recycling of 50% of the waste stream (WM Strategy)
  - Treatment of organic waste before disposal (EU landfill directive)

Economy of Scale

- Total specific costs of waste facilities decrease with increasing throughput
- Minimum throughput for an economic operation
  (e.g. 100 t/d for sanitary landfills)



„Regional“ Waste Management Activities

The following components are considered as “regional”:

– Transfer and Transport

– Treatment of Residual Waste (including Mechanical Biological Treatment and Incineration)

– Sanitary Landfills

„Local“ Waste Management Activities

The following components are considered as “local”:

- Street sweeping and waste collection

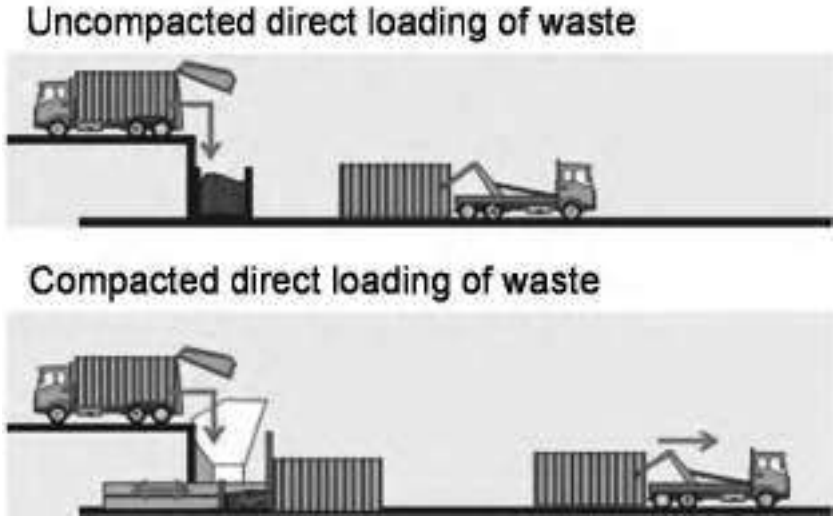
- Separate collection and processing of recyclables and organic waste

- Landfills for construction waste (inert waste)

- Rehabilitation of dumpsites

Waste Transfer: Transfer Station

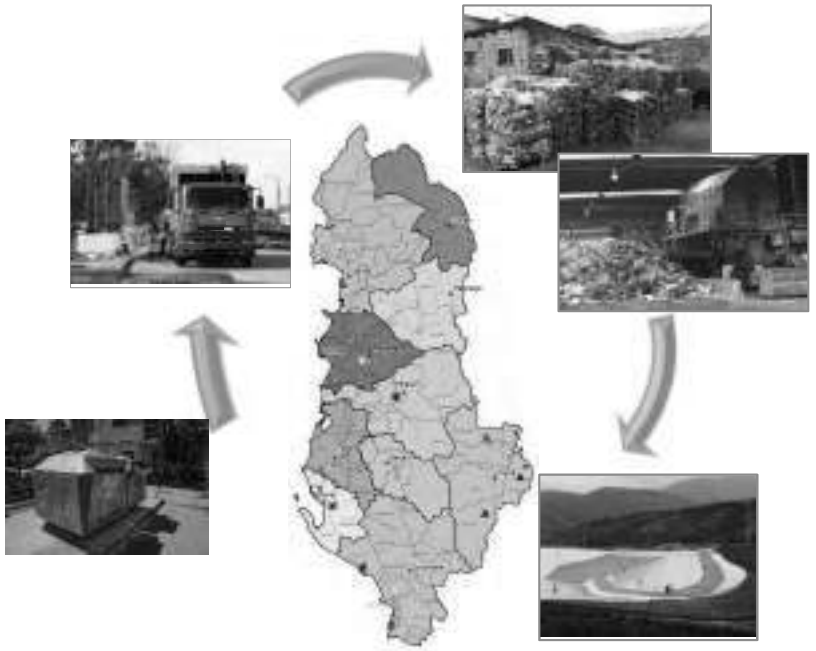
- Purpose of waste transfer for long distance transport:
  - Better utilisation of collection vehicles
  - Connection of small settlements
  - Less operating and maintenance costs
  - Less traffic / less emissions



- Implementation of transfer stations is recommendable for locations with > 30 km transport distance

Content of the Presentation

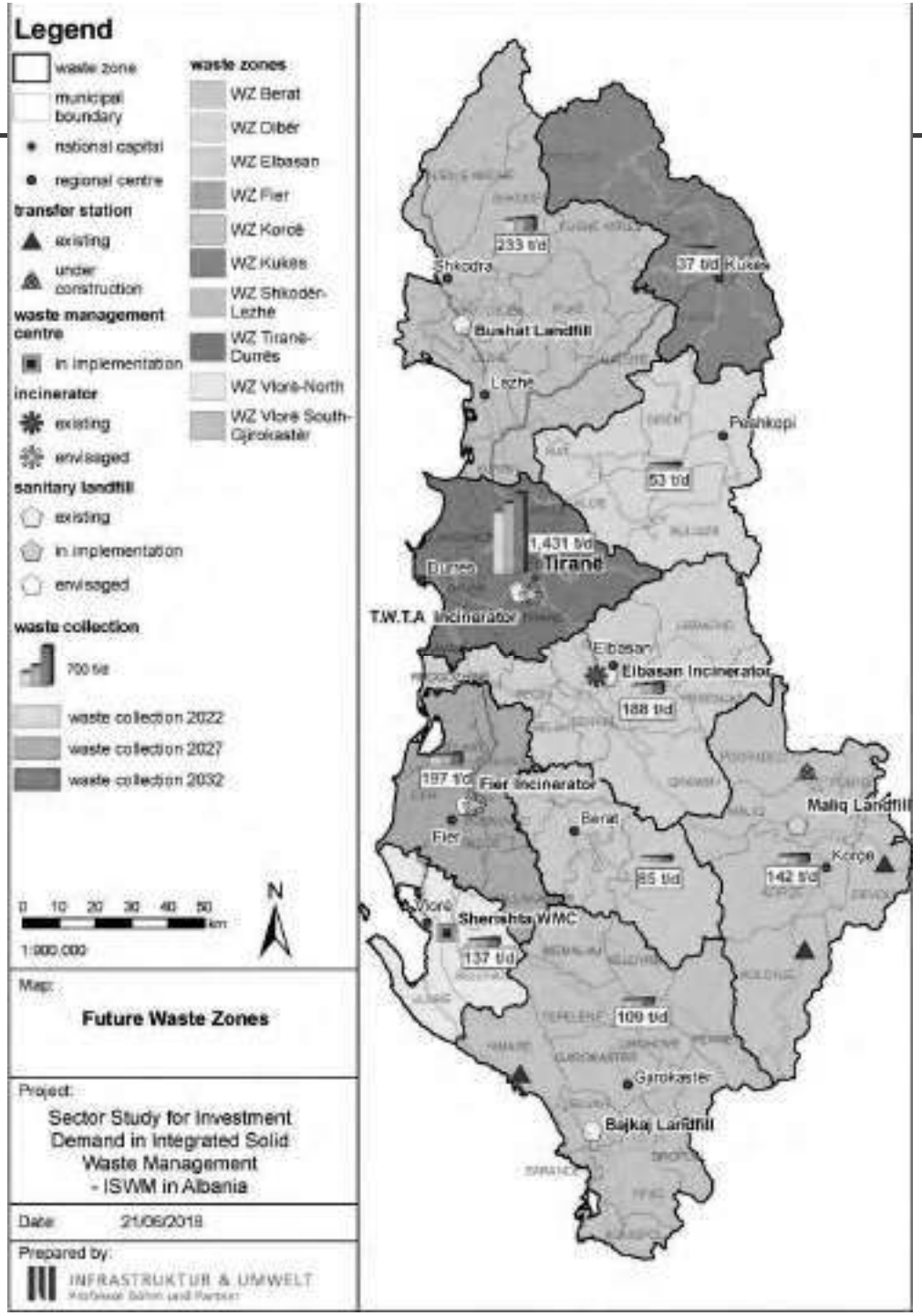
1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Berat



Proposed Waste Zones

Criteria for demarcation of waste zones:

- Spatial structure
- Accessibility
- Population size and development
- Waste amount



Proposed Waste Zone Berat

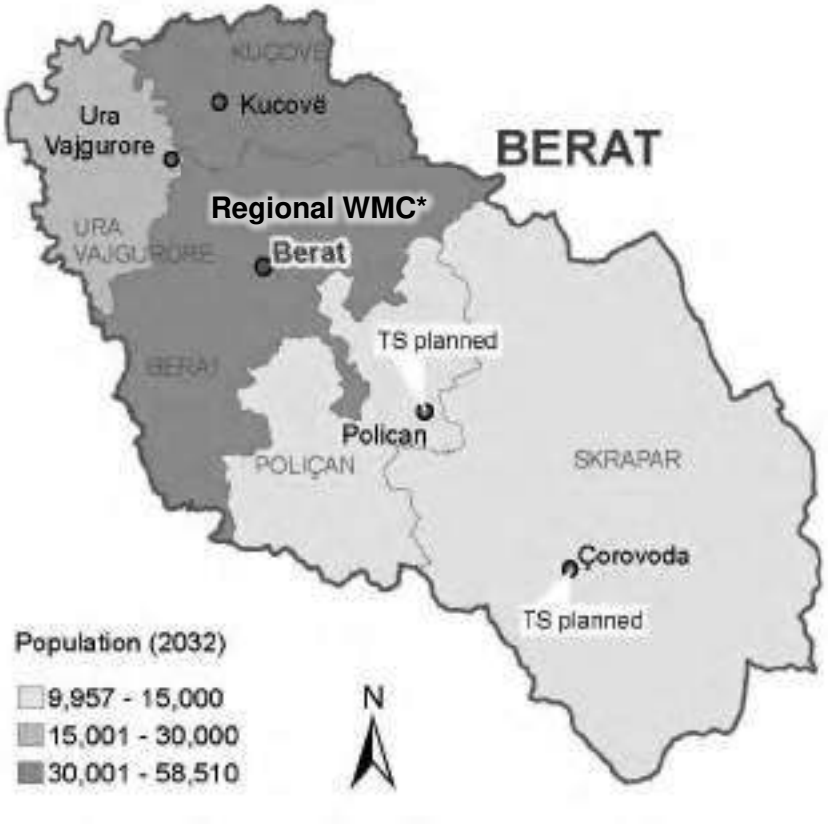
*WMC: Waste Management Centre

TS: Transfer Station

Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Berat
   - Regional Investment Measures
   - Investment and Annual Operating Costs for Regional Facilities
   - Investment and Annual Operating Costs for Local Facilities
   - Specific Costs and Household Tariffs

Waste Zone Berat



Municipality	Waste Amount (Collected Waste)		
	2022	2027	2032
Berat	44 t/d	45 t/d	46 t/d
Ura Vajgurore	7 t/d	8 t/d	9 t/d
Kuçovë	18 t/d	19 t/d	20 t/d
Skrapar	4 t/d	4 t/d	5 t/d
Poliçan	3 t/d	4 t/d	4 t/d
TOTAL	**77 t/d**	**81 t/d**	**85 t/d**

*WMC: Waste Management Centre

WZ Berat: Regional Investment Measures

- Planned regional waste facilities for Waste Zone Berat
- Concept might be revisited during the upcoming SECO funded SWM project

Waste Zone: WZ Berat

LOAD Default Data | LOAD Saved Data | Delete Saved Data | Save Input

Key Specifications	Phase 1	Phase 2	Phase 3
Population	151,851	143,087	135,283
Collected Municipal Waste Quantity [t/a]	28,010	29,679	30,874
Amount of recycables [t/a]	9,524	10,091	10,497
Amount of organic waste [t/a]	14,005	14,840	15,437
Share of Urban Waste	82%	79%	77%
Inert Waste Quantity [t/a]	30,093	28,393	26,881

Regional Facilities	Priority	Status	Phase 1	Phase 2	Phase 3	Known Costs [EUR]
Long Distance Transport						
Ramp type transfer station			2	Existing	Existing	
Waste Treatment						
MBT with composting				1	Existing	
Waste Disposal						
Sanitary Landfill			1	Existing	Extension	

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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WZ Berat: Investment Costs for Regional Facilities

Investment costs for regional facilities	WZ Berat	Currency EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	400,000		
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation			
MBT with composting		5,067,000	
Anaerobic Digestion (AD)			
Moving grate incineration			
Waste Disposal			
Controlled Landfill			
Sanitary Landfill	3,673,000		2,131,000

Total Investment Costs for Regional Facilities	**4,073,000**	**5,067,000**	**2,131,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Berat: Annual Operating Costs for Regional Facilities

Annual operating costs for regional facilities	WZ Berat	Currency
		EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	16,000	15,000	14,000
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation			
MBT with composting		941,000	856,000
Anaerobic Digestion (AD)			
Moving grate incineration			
Waste Disposal			
Controlled Landfill			
Sanitary Landfill	259,000	74,000	70,000

Total Operating Costs for Regional Facilities	**275,000**	**1,030,000**	**940,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Berat: Investment Costs for Local Facilities

Investment costs for local SWM components	WZ Berat	Currency
		EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	74,000	73,000	79,000
Mechanical street sweeping	15,000	31,000	40,000
Waste Collection			
Collection of mixed waste	670,000	646,000	578,000
Collection of organic waste		120,000	122,000
Collection of dry recyclables	181,000	294,000	407,000
Local Facilities			
Clean MRF			
Windrow composting		439,000	247,000
Fully automated in-house composting plant			
Landfill rehabilitation		737,000	3,061,000
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	804,000	48,000	31,000

Total Investment Costs for Local SWM Components	**1,744,000**	**2,388,000**	**4,565,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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WZ Berat: Annual Operating Costs for Local Facilities

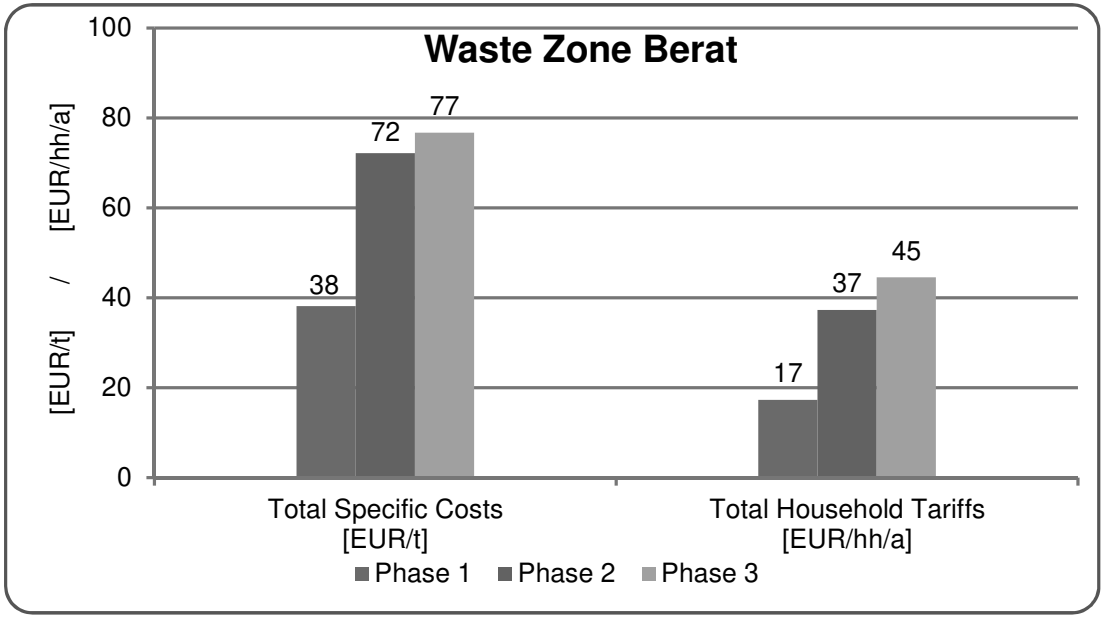
Annual operating costs for local SWM components	WZ Berat	Currency
		EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	182,600	197,000	209,300
Mechanical street sweeping	14,700	22,800	31,000
Waste Collection			
Collection of mixed waste	322,300	287,600	261,700
Collection of organic waste		43,600	68,000
Collection of dry recyclables	22,700	47,500	74,000
Local Facilities			
Clean MRF			
Windrow composting		19,000	29,400
Fully automated in-house composting plant			
Landfill rehabilitation		4,100	16,300
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	46,500	49,200	51,200

Total Operating Costs for Local SWM Components	**588,800**	**670,800**	**740,900**

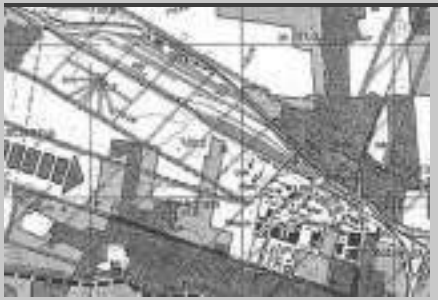
Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Berat: Specific Costs and Household Tariffs



Assumptions for tariff calculation:

- SWM costs financed:
  80% by households & 20% by commercial entities
- Fee payment from all households
- Costs for the investment of regional measures and dumpsite rehabilitation are covered from other sources



Thank you very much!

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9.3.2 Annex 3.2: Minutes of Waste Zone Meeting Vlora South-Gjirokaster

Meeting Notes

Project:	Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management in Albania
Theme/objective:	Waste Zone meeting Vlora South-Gjirokastër local stakeholders
Location:	Çajupi Hotel meeting room, Gjirokastër
Date:	Tuesday, 3 July 2018
Time:	See Agenda (Annex 1)
Participants:	See participants list (Annex 2)
Distribution list:	Ministry of Infrastructure and Energy (MoIE) Ministry of Tourism and Environment (MoTE) KfW Development Bank Consultant
Author:	Consultant
Annexes:	1. Agenda 2. Participants List 3. Presentation

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Partner
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1 Welcome Notes

The meeting started with opening remarks from the Prefect of Gjirokastër, the Prefect of Vlora, the Head of the Vlora Regional Council, and Isa Memia (MoIE). Participants were self-introduced (the list of participants and contact details are enclosed as Annex 2 to the Meeting Notes).

Gernod Dilewski (IU) welcomed all participants on behalf of the Consultant.

2 Presentation of the Draft ISWM Master Plan

The Consultant presented the following four topics, related to the overall development of the Master Plan and focusing in depth on the particularities of the Vlora South-Gjirokastër Waste Zone:

1. Background of the ISWM Master Plan
2. Planning Criteria for the preparation of the Investment Plan
3. Proposed Waste Zones
4. Consolidated Investment Measures for Vlora South-Gjirokastër

Further details are provided in the presentation attached in Annex 3. Throughout the presentation, the participants were invited to provide comments and feedback.

3 Discussion of ISWM Master Plan and Consolidated Investment Measures for Vlora South-Gjirokastër Waste Zone

Prefect of Gjirokastër

- The plan will offer a final solution for waste situation and recycling activities in the region
- Thanks to KfW support, presenting in the meeting, and support they have provided in preparing this draft

Isa Memia

- Master Plan is a very important document, outlining the financing steps for the waste management infrastructure in the country
- Draft includes measures for three financing stages, up to 2032

Head of Vlora Regional Council

- The waste zone is within regions that are most impacted and very interested
- The Shareholder Company that we have is facing difficulties

- Bajkaj landfill is operating in difficult conditions, not in line with the business plan
- Master Plan is a real study of the territory, but it also helps the landfill, since it envisages also participation of Gjirokastër municipalities
- The investment coming for construction of Kardhiq road will help Bajkaj landfill operation

Gernod Dilewski

- Presentation of the ongoing projects in the region, outlining the synergies and differences in the approach and output of both projects
- This meeting is the opportunity for you to raise the questions and have an open discussion
- Investment plan is open to the best possible solution and it is a tool to be amended over time
- It is the time to give your feedback, which you can do today, but also in the next 10 days. Comments can be sent to the MoIE so that they can be reflected in the final version of the Master Plan

Saranda Municipality

- What does the presented 17 Euro for covering the cost per family include?
- Bajkaj gate fee we pay is 15$/ton

Gernod Dilewski

- The cost per family includes all the elements that we have presented in the regional and local activities
- Bajkaj landfill unit cost is currently high due to the low amount of waste received
- In the future we expect twice the waste amounts that they receive today

Saranda Municipality

- Is the study only covering the urban waste management and not the other waste streams? In Bajkaj we have a list of accepted and not-accepted waste streams – what is about the other waste streams?

Gernod Dilewski

- The sector study is concerned with municipal solid waste and inert waste
- The draft WM strategy foresees the preparation of individual master plans for other waste streams as well

Isa Memia

- Municipalities are responsible for urban and inert waste
- Based on the DCM, duties are defined for the inert waste producer, where municipalities have the duty to define temporary or permanent inert waste landfill locations
- Urban waste is currently mixed with other waste streams; different streams should be managed in different ways

Finiq Municipality

- The family and population data taken from Instat do not reflect the real resident situation in several villages where only the elderly have remained
- Business coverage in these areas should be higher than 20% since they are the main producers (e.g. Vrion with its industrial area)

Gernod Dilewski

- Official INSTAT data have been used with MoF correction factor
- The plan is a country wide model applied in all 61 municipalities and we are aware that situation varies in different municipalities

Isa Memia

- The costing is presented for the regional level, since we need the minimum amount of waste, to bring the cost down

Vlora Regional Council

- Regret that the Mayors are not present, political level representation is crucial
- 2 years been going door-to door, to make the landfill survive
- Hope this draft comes to fruition, it will save the waste management in the region and will also save the landfill
- In other areas they look for several million euro regional facility investment and we are lucky to have one
- The initial study prepared envisaged a gate fee of 26 Euro/ton
- 15 $/ton currently used was a political decision that is not feasible
- Municipalities procure only collection not disposal
- The government decision encouraged all municipalities to include the gate fee on economic calculations for waste management
- Municipalities need to look into tons of waste they procure for collection and how much they dispose of
- If we do not dispose, the cost will be high

- Costs are still low since the amortisation of vehicles is not included in the gate fee
- The plan extends the territory of landfill coverage and waste from southern municipalities, which will bring the cost down
- Appreciate this plan but are the measures funded?

Gernod Dilewski

- There is need to improve current landfill situation, and budget has been discussed and will be included in the final version

Isa Memia

- Concern regarding Bajkaj landfill is under discussion in the ministry in the framework of budget review
- We are aware that regional measures are difficult to be faced by municipalities, in the presentation the costs for the regional investments are included as central level undertaking
- Management of regional facilities is carried out by the municipalities in various cooperation forms and we do not have a unified operation method nationally
- Central Government is very engaged and until now has covered all the finances for regional construction
- Regarding finances for Master Plan implementation we are discussing with KfW
- Financial investment will be supported but it remains with the municipalities and their engagement for the operation of facilities

Prefect of Vlora

- For the Master Plan the municipality should be the responsible one
- Cooperation between the municipalities in Vlora and Gjirokastër regions should be encouraged through the consultation with municipalities

Prefect of Gjirokastër

- The municipalities should receive an additional reminder for submitting any comments they have on the current draft

EU / IPA Project Representative

- The project will further detail within the feasibility study the locations and calculations for the transfer stations
- 7 municipalities in the region have agreed to cooperate
- National legislation is needed to support the operation of any regional facilities
- There is a need for further efforts and larger engagement of municipalities

Head of Vlora Regional Council

- Is there any support for furthest municipalities using transfer stations?

Gernod Dilewski

- Have considered long distance transport at the regional level
- Are looking at the transfer system as a system organised and managed by one organisation with a unified gate fee that includes the long distance transport costs

Prefect of Gjirokastër

- Memaliaj and Përmet municipalities are the furthest away
- A joint plan should be for the long distance transport and regulated nationally and the costs calculated
- Master Plan is excellent and timeframe until 2032 gives time to improve

Isa Memia

- IPA consultant will go further into deeper details regarding costing and management

Alba Dakoli Wilson

- Are there any comments or changes that should be reflected in the current Vlora South-Gjirokastër Waste Zone Consolidated Investment Measures

All participants

- We agree with the proposal as it is
- No further comments or need for changes
- A second reminder for comments should be sent to all municipalities for receiving any further details

4 Closing of the meeting

The Prefects of Gjirokastër and Vlora had closing words at the end of the meeting, thanking the participants for the input and discussion and the consultant for the presentation and explanations.

INFRASTRUKTUR & UMWELT
3rd July 2018

Gernod Dilewski (Consultant, Team Leader)

Annex 1: Agenda

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Integrated Solid Waste Management (ISWM) in Albania
Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management

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Public Consultation on the Waste Master Plan and "Strategic Environmental Assessment" pursuant to the Law no. 146/2014, "On Notification and Public Consultation"

Tuesday, 03 July 2018 (10:00 – 13:30 hours)

Address: Çajupi Hotel, Sheshi "Çerçiz Topulli", Gjirokastër, Albania

www.cajupi.com

Background:

KfW has commissioned INFRASTRUKTUR & UMWELT, COWI and FLAG with the implementation of consulting services for the above mentioned project. The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

The specific objectives of the Sector Study are

- to determine the proper methodology and technology for future investments in the SWM sector
- to determine the proper costs and tariffs
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments

- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/or disposal facilities
- to propose the necessary legal and institutional changes
- to propose any other accompanying measures

The workshop is intended to present and discuss

- the consolidated investment measures in each waste zone
- overall costs of “regional” and “local” investments
- operational costs of “regional” and “local” activities, as well as relevant household tariffs

AGENDA

9:45	Registration
10:00	**Welcome note** Ministry of Infrastructure and Energy
10:15	**Welcome note and introduction to the Workshop Objectives** Consultant
10:30	**Self-introduction of Participants**
10:45	**Presentation of the Sector Study for Investment Demand in ISWM (Waste Master Plan)** Consultant
11:30	**Consolidated Investment Measures for Waste Zones** Consultant
12:00	***- Coffee break -***
12:30	**Discussion**
13:20	**Closure of the Meeting** Ministry of Infrastructure and Energy
13:30	***- Working lunch -***

Annex 2: Participants List

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Integrated Solid Waste Management (ISWM) in Albania
Public Consultation on the Waste Master Plan and the Strategic Environmental Assessment

Tuesday, 3 July 2018 (11:00-13:30)
Address: Hotel Cajupi, Gjirokaster

Nr.	Emri/ Name	Mbiemri/ Surname	Pozicioni/ Position	Institucioni/ Institution	Email	Telefon	Konfirmimi per drekë/Confirmation for lunch
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3.	[illegible]	Vasili	[illegible]	Drejtor	[illegible]	069240900	+
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5.	Edmond	Kasaj	Spec. [illegible]	AKZM		0672867161	+
6.	Ina	Cani	Kryeinspektor	ISHSH	Ina.Cani@inspektorati[illegible].gov.al	0654249[illegible]	
7.	Seit	Rondo	Kryeinspektor	ISHMPU	[illegible]@gmail.com	0699173055	
8.	Bledar [illegible]	Coushi	Spec. Mjedisi	Bashkia Memaliaj	coushi.bledar@gmail	0674960792	+
9.	Vasif Mangoa		Administrator	[illegible]	vasif.mang@yahoo.com	069575280[illegible]	+
10.	Areti	Papaleuna	[illegible]	Bashkia [illegible]	[illegible]@yahoo.com	06[illegible]	+
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13.	Isa	Mema	[illegible]	MIE	isa.mema@infrastruktura.gov.al	0672[illegible]120	+

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Integrated Solid Waste Management (ISWM) in Albania
Public Consultation on the Waste Master Plan and the Strategic Environmental Assessment

Tuesday, 3 July 2018 (11:00-13:30)
Address: Hotel Cajupi, Gjirokaster

No.	Emri/ Name	Mbiemri/ Surname	Pozicioni/ Position	Institucioni/ Institution	Email	Telefon	Konfirmim per dreke/Confirmation for lunch
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[illegible]	ARMAND	HILAJ	Kr. Qarkut Gjirokaster	K. Q. Gjirokaster	[illegible]	0682[illegible]821	+
[illegible]	JORGJI	THANO	PERGJ. JERT ZHVILLIM URBAN	PROFESIONAL	[illegible]	067[illegible]	+
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[illegible]	Edlira	Sheku	Specialist [illegible]	Prefekt. Gjirok.	[illegible]@gmail.com	0694444884	✓
[illegible]	VASIL	[illegible]	Specialist [illegible]	Permet	[illegible]@yahoo.com	069[illegible]	+
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[illegible]	[illegible]	[illegible]	Perg. i [illegible]	[illegible]	[illegible]	0694059418	✓
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[illegible]	Anila	Maina	[illegible]	HIE	Anila.Maina@infrastruktur[illegible]		[illegible]
[illegible]	Klaud	Gjoli	[illegible]	Keshilli i Qarkut Vlore	klaudgj@gmail.com	0673[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	ARSH [illegible]	[illegible]	[illegible]@gmail.com		[illegible]
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[illegible]	Arjola	Damaj	[illegible]	ARSH Vlore	[illegible]@yahoo.com	0695545267	[illegible]
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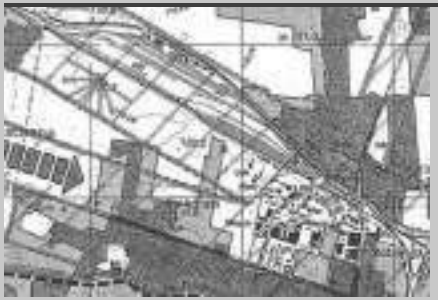
Annex 3: Presentation



Integrated Solid Waste Management in Albania -
Sector Study for Investment Demand (ISWM Masterplan)

Consultation Meeting with Local Stakeholders
Waste Zone Vlorë South-Gjirokastër

Gjirokastër, 3 July 2018

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner
COWI
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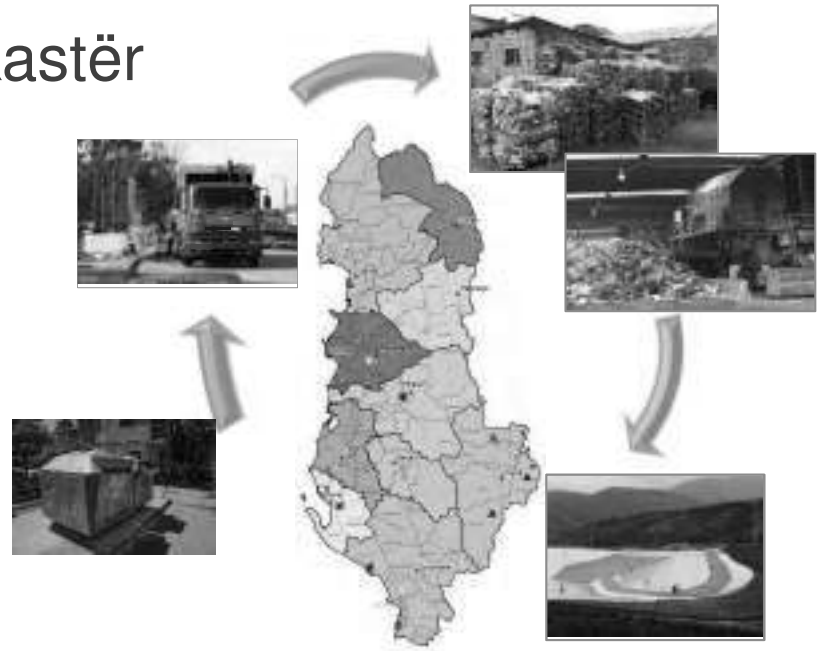
Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Vlorë South-Gjirokastër



Background of the ISWM Masterplan

The Sector Study for Investment Demand for Integrated Waste Management in Albania is

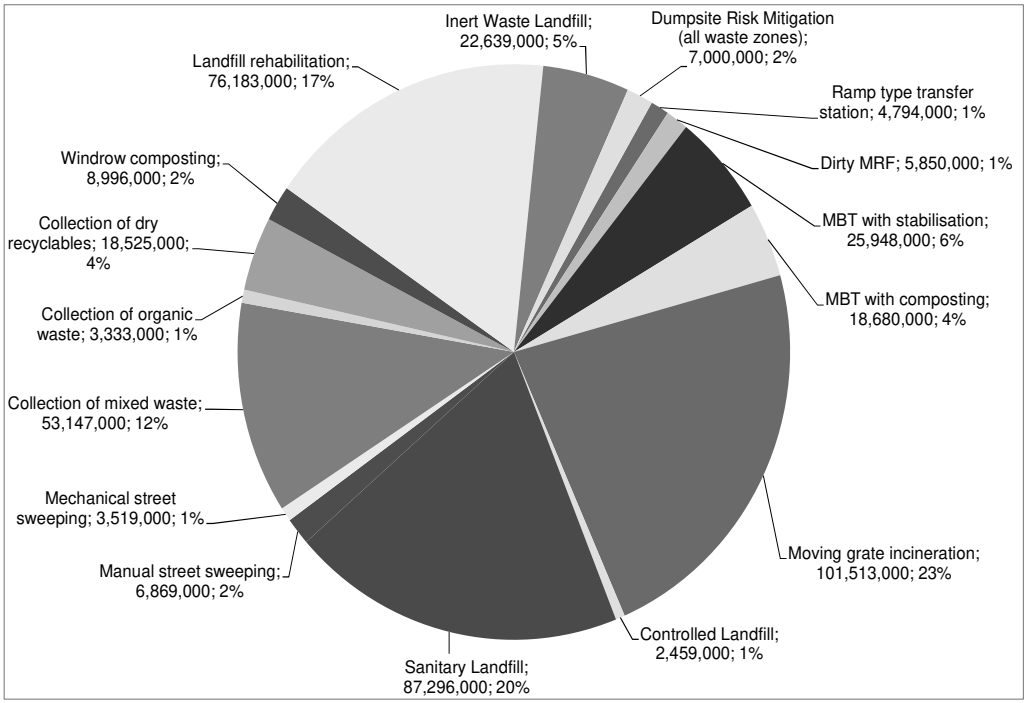
- prepared by the Ministry of Infrastructure and Energy (MoIE)

- financed by the German Development Bank KfW

KFW

Background of the ISWM Masterplan

- Main objectives:
  - to determine the proper methodology and technology for future investments in the SWM sector
  - to determine the proper costs and tariffs
  - to provide a phased investment plan for local and regional ISWM infrastructure
  - to propose necessary legal and institutional changes



Background of the ISWM Masterplan

- All regions have been visited at the start of the project in the first half of 2017, to discuss
  - the current situation of waste management services
  - main challenges
  - ongoing plans and initiatives

- An inter-ministerial working group has been established with representatives from MoIE and MoTE for the preparation of the ISWM Masterplan

- The Draft ISWM Masterplan will now be discussed with stakeholders before preparation of the final version of the Masterplan

Background of the ISWM Masterplan

The main purpose of the today's meeting is to give the municipalities the opportunity to comment on the

- proposed **waste zones** and
- foreseen **investment measures for regional investment**

in order to consider the opinion of the municipalities in the preparation of the final **ISWM Masterplan**

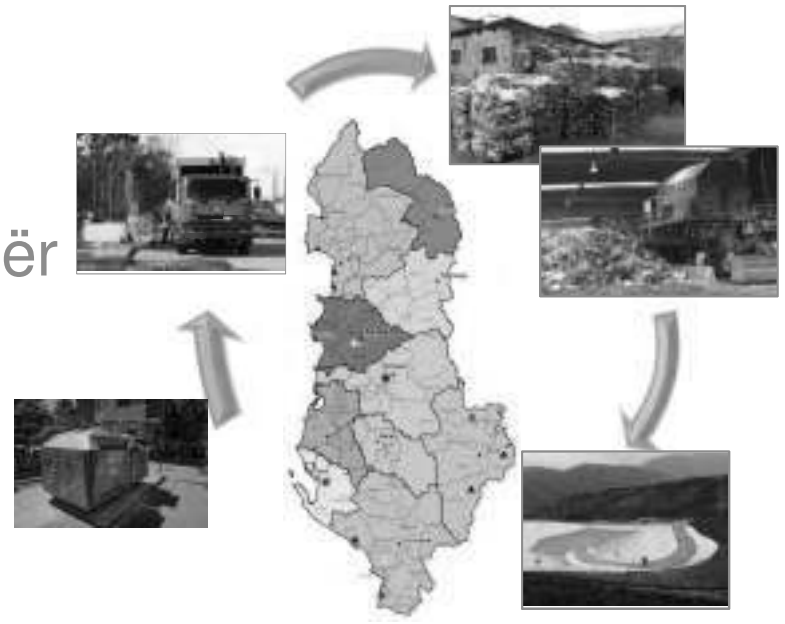
Content of the Presentation

1. Background of the ISWM Masterplan

2. Planning Criteria
   - Key Areas for Improved Waste Management
   - Economy of Scale
   - Regional and Local Waste Management Activities

3. Proposed Waste Zones

4. Waste Zone Vlorë South-Gjirokastër

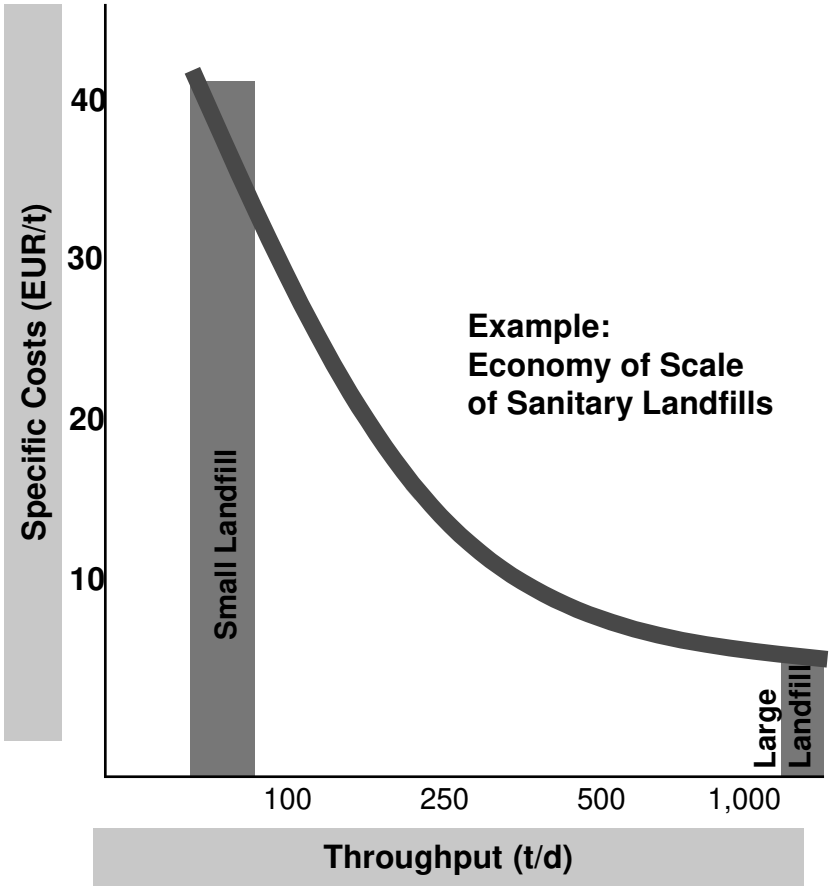


Key Areas for Improved Waste Management

- Besides improvement of **waste collection** and **disposal**, Albania as an EU candidate country is obliged to comply with **EU standards for SWM**.
- These have been transferred into Albanian legislation and focus on **waste recovery** and **treatment**
  - Recovery and recycling of 50% of the waste stream (WM Strategy)
  - Treatment of organic waste before disposal (EU landfill directive)

Economy of Scale

- Total specific costs of waste facilities decrease with increasing throughput
- Minimum throughput for an economic operation
  (e.g. 100 t/d for sanitary landfills)



„Regional“ Waste Management Activities

The following components are considered as “regional”:

– Transfer and Transport

– Treatment of Residual Waste (including Mechanical Biological Treatment and Incineration)

– Sanitary Landfills

„Local“ Waste Management Activities

The following components are considered as “local”:

- Street sweeping and waste collection

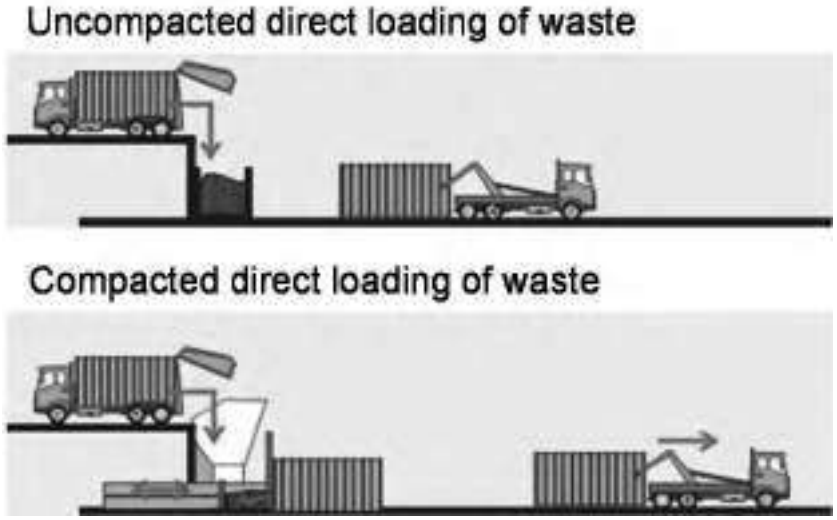
- Separate collection and processing of recyclables and organic waste

- Landfills for construction waste (inert waste)

- Rehabilitation of dumpsites

Waste Transfer: Transfer Station

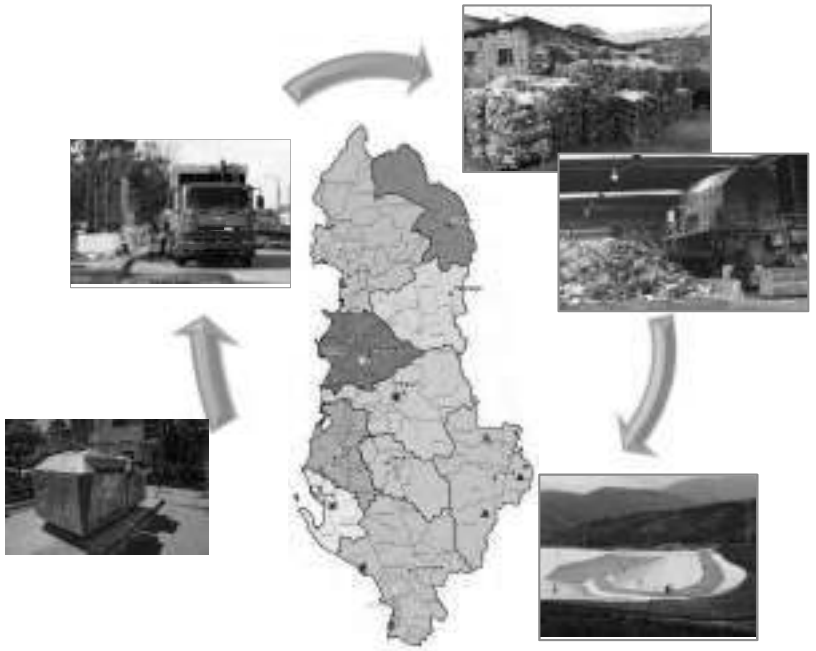
- Purpose of waste transfer for long distance transport:
  - Better utilisation of collection vehicles
  - Connection of small settlements
  - Less operating and maintenance costs
  - Less traffic / less emissions



- Implementation of transfer stations is recommendable for locations with > 30 km transport distance

Content of the Presentation

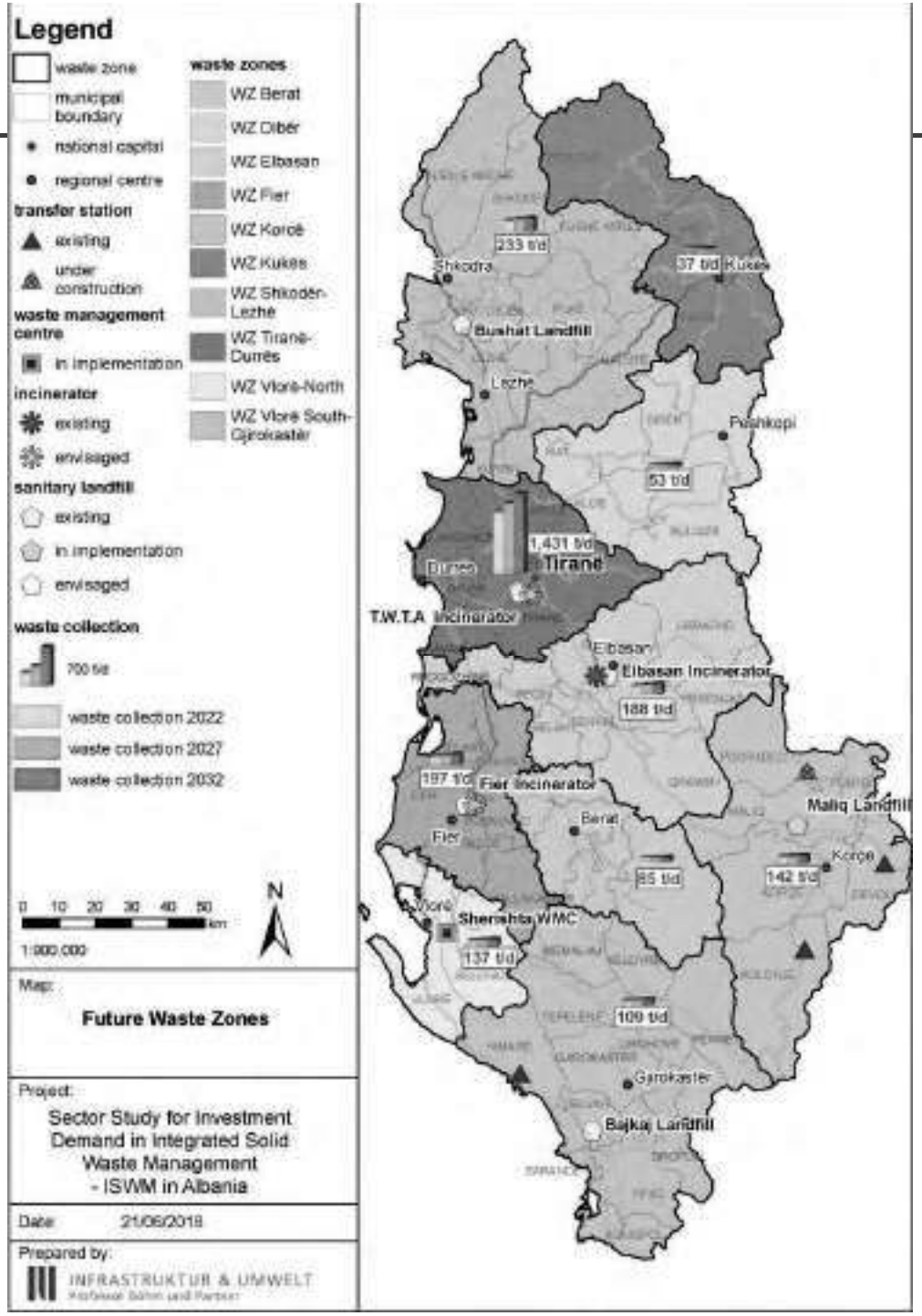
1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Vlorë South-Gjirokastër



Proposed Waste Zones

Criteria for demarcation of waste zones:

- Spatial structure
- Accessibility
- Population size and development
- Waste amount



Proposed Waste Zone Vlorë South-Gjirokastër

*TS: Transfer Station
for a transport distance > 30 km

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Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Vlorë South-Gjirokastër
   - Regional Investment Measures
   - Investment and Annual Operating Costs for Regional Facilities
   - Investment and Annual Operating Costs for Local Facilities
   - Specific Costs and Household Tariffs

Waste Zone Vlorë South-Gjirokastër

Municipality	Waste Amount (Collected Waste)		
	2022	2027	2032
Delvinë	6 t/d	6 t/d	7 t/d
Himarë	7 t/d	8 t/d	8 t/d
Finiq	6 t/d	7 t/d	8 t/d
Konispol	2 t/d	3 t/d	3 t/d
Sarandë	28 t/d	32 t/d	36 t/d
Dropull	3 t/d	4 t/d	4 t/d
Gjirokastër	22 t/d	23 t/d	23 t/d
Këlcyrë	3 t/d	4 t/d	5 t/d
Libohovë	1 t/d	1 t/d	2 t/d
Memaliaj	4 t/d	4 t/d	5 t/d
Përmet	5 t/d	4 t/d	4 t/d
TOTAL	**87 t/d**	**96 t/d**	**105 t/d**

WZ Vlorë South-Gjirokastër : Regional Investment Measures

- Existing and planned regional waste facilities for Waste Zone Vlorë South-Gjirokastër

Waste Zone: WZ Vlorë South-Gjirokastër

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Key Specifications	Phase 1	Phase 2	Phase 3
Population	173.449	170.921	169.989
Collected Municipal Waste Quantity [t/a]	33.163	36.546	39.805
Amount of recycables [t/a]	11.276	12.426	13.534
Amount of organic waste [t/a]	16.582	18.273	19.903
Share of Urban Waste	67%	65%	64%
Inert Waste Quantity [t/a]	82.122	84.470	87.572

Regional Facilities	Priority	Status	Phase 1	Phase 2	Phase 3	Known Costs [EUR]
Long Distance Transport						
Ramp type transfer station			3	Existing	Existing	
Waste Treatment						
MBT with composting				1	Existing	
Waste Disposal						
Sanitary Landfill		Existing	Existing	Extension	Extension	4,207,000

- Details of future ISWM system will be elaborated in the scope of the ongoing IPA project

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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WZ Vlorë South-Gjirokastër :
Investment Costs for Regional Facilities

Investment costs for regional facilities	WZ Vlorë South-Gjirokastër	Currency EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	600,000		
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation			
MBT with composting		6,240,000	
Anaerobic Digestion (AD)			
Moving grate incineration			
Waste Disposal			
Controlled Landfill			
Sanitary Landfill		2,522,000	2,747,000

Total Investment Costs for Regional Facilities	600,000	8,762,000	2,747,000

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Vlorë South-Gjirokastër :
Annual Operating Costs for Regional Facilities

Annual operating costs for regional facilities	WZ Vlorë South-Gjirokastër	Currency EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	110,000	100,000	88,000
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation			
MBT with composting		1,158,000	1,025,000
Anaerobic Digestion (AD)			
Moving grate incineration			
Waste Disposal			
Controlled Landfill			
Sanitary Landfill	307,000	91,000	90,000
Total Operating Costs for Regional Facilities	**417,000**	**1,349,000**	**1,203,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Vlorë South-Gjirokastër: Investment Costs for Local Facilities

Investment costs for local SWM components	WZ Vlorë South-Gjirokastër		Currency EUR
Local SWM Components	**Phase 1**	**Phase 2**	**Phase 3**
Street Cleaning			
Manual street sweeping	79,000	91,000	106,000
Mechanical street sweeping			
Waste Collection			
Collection of mixed waste	829,000	768,000	714,000
Collection of organic waste		144,000	329,000
Collection of dry recyclables	213,000	368,000	267,000
Local Facilities			
Clean MRF			
Windrow composting		543,000	930,000
Fully automated in-house composting plant			
Landfill rehabilitation	663,000	2,170,000	1,686,000
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill			
Total Investment Costs for Local SWM Components	**1,784,000**	**4,084,000**	**4,032,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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WZ Vlorë South-Gjirokastër:
Annual Operating Costs for Local Facilities

Annual operating costs for local SWM components	WZ Vlorë South-Gjirokastër	Currency EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	204,400	239,300	277,100
Mechanical street sweeping			
Waste Collection			
Collection of mixed waste	381,900	354,300	313,700
Collection of organic waste		53,800	146,200
Collection of dry recyclables	27,000	58,600	64,100
Local Facilities			
Clean MRF			
Windrow composting		23,800	63,300
Fully automated in-house composting plant			
Landfill rehabilitation	3,700	11,700	9,200
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill			

Total Operating Costs for Local SWM Components	617,000	741,500	873,600

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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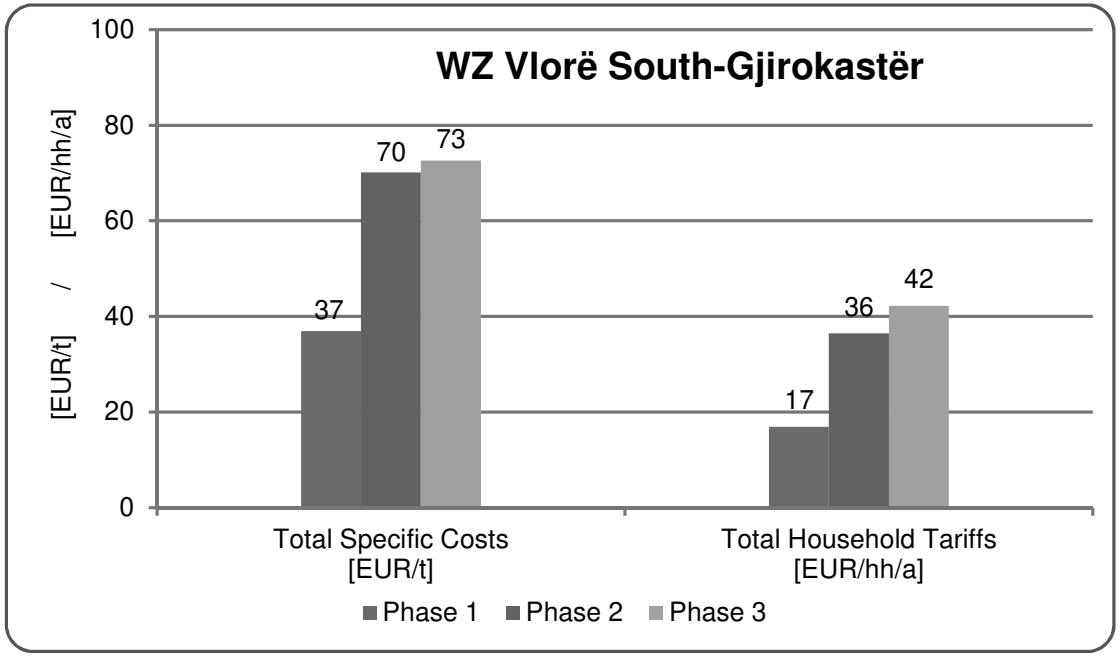
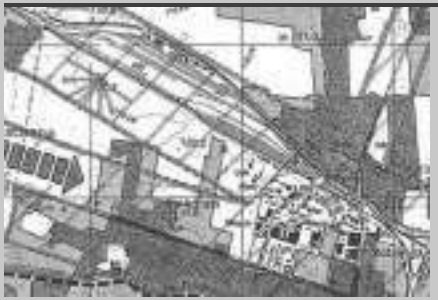
WZ Vlorë South-Gjirokastër: Specific Costs and Household Tariffs



Assumptions for tariff calculation:

- SWM costs financed:
  80% by households & 20% by commercial entities
- Fee payment from all households
- Costs for the investment of regional measures and dumpsite rehabilitation are covered from other sources



Thank you very much!

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9.3.3 Annex 3.3: Minutes of Waste Zone Meeting Fier

Meeting Notes

Project:	Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management in Albania
Theme/objective:	Waste Zone meeting Fier local stakeholders
Location:	Fier Hotel meeting room
Date:	Wednesday, 4 July 2018
Time:	See Agenda (Annex 1)
Participants:	See participants list (Annex 2)
Distribution list:	Ministry of Infrastructure and Energy (MoIE) Ministry of Tourism and Environment (MoTE) KfW Development Bank Consultant
Author:	Consultant
Annexes:	1. Agenda 2. Participants List 3. Presentations

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Partner
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1 Welcome Notes

The meeting started with opening remarks from the General Secretary of Fier Prefecture and Isa Memia (MoIE). Participants were self-introduced (the list of participants and contact details are enclosed as Annex 2 to the Meeting Notes).

Gernod Dilewski (IU) welcomed all participants on behalf of the Consultant.

2 Presentation of the Draft ISWM Master Plan

The Consultant presented the following four topics, related to the overall development of the Master Plan and focusing in depth on the particularities of the Fier Waste Zone:

1. Background of the ISWM Master Plan
2. Planning Criteria for the preparation of the Investment Plan
3. Proposed Waste Zones
4. Consolidated Investment Measures for Fier Waste Zone

Further details are provided in the presentation attached in Annex 3. Throughout the presentation, the participants were invited to provide comments and feedback.

3 Discussion of ISWM Master Plan and Consolidated Investment Measures for Fier Waste Zone

Isa Memia

- MoIE has developed the draft of this Master Plan with the KfW support
- Municipal participation is very important therefore we today are discussing with the local stakeholders within the Fier region

Gernod Dilewski

- Deliver the presentation attached in annex 3
- This Master Plan is designed for the whole country
- Currently being discussed with all the municipalities, to make sure that we can capture all the municipal comments and requests
- This is the right time to present your comments and questions so that they can be taken into account
- In Fier region we are not starting from scratch – some initiatives are already in place and we have to take them into account

Roskovec Mayor

- Thank you for this consultation – important the fact that our views will be incorporated on the final draft

- Decision for the incinerator is a central government decision and is not an issue for discussion, Fier incineration will start up soon
- Our emergency is the Marinza dump site that in addition to the oil extraction pollution has the additional problem of urban waste, which we have improved with some measures (fence, environmental permission) but currently its capacity is exceeded
- We have carried out a feasibility study and defined the place for placing a transfer station (TS)
- Based on legal and environmental issues, road access, not agricultural land
- TS is necessary for the municipalities, given the long distances of transport to the incinerator
- Taking the waste without any separation – for glass, plastic, etc., the tariff that municipality will pay in the incinerator is higher, due to transport involved
- Distance and volume both impact the cost for the municipality
- Separation will also provide employment for people that can do waste separation, and reduce the volume at the same time

Gernod Dilewski

- Important issue raised with the separation of waste since it impacts not only fulfilment of the legal obligations but also the cost involved by the municipalities
- Recuperation of material at the TS is a good alternative that needs observing
- TS will need to have a detailed study for the whole waste area

Isa Memia

- The ministry is aware of the request of Roskovec municipality
- 30 km distance was the guideline for TS placement
- Based on Roskovec municipality request and justification we have included it in the draft Master Plan despite the current distance
- The government is looking into financing these TS as soon as possible
- Transatlantic Pipeline Project was a possibility for financing the construction of the transfer station
- In the long term TS construction might be negotiated
- However waste management is municipal function, in all its components
- Government is nonetheless looking into financing all regional facilities and the transfer stations
- Current dumpsites are a country wide problem – the Master Plan has planned the investment for legal standard rehabilitation, currently unaffordable
- Emergency plan is set up by the MoTE and the financing possibility being acquired
- Fier region is privileged given that Central Government is covering investment and operation of incinerator for the first 6 years

Fier Prefecture Secretary General

- Incinerator planned to be ready in 15 months, if we still do not have a clear study on how the transport will be carried out, how can we be prepared within this time frame?
- Municipal engagement has to assure the way that the transport will be organised
- A detailed study has to be developed in time, to define the routes, financial impact and division of duties and responsibilities of various parties
- Discrepancies between further and closer municipalities using the incinerator have to be resolved, otherwise small municipalities will be unable to use the facility

Fier Municipality

- There will be additional costs involved given the current state of our waste management and the situation of environment justifies the extra effort and costs needed

- We have taken into account the distance of Roskovec municipality, we will focus and discuss with the other municipalities using the incinerator

Lushnja Municipality

- Recently there was a DCM on calculating the cost per inhabitant and that will be helpful for us
- Reduction of waste amounts is our key concern at the moment
- Should also look into the producers responsible for certain waste streams
- The Master Plan follows the national strategy, what is the next step -- do we have regional plans and then local plans to align our policies?

Gernod Dilewski

- In western Europe recycling of various waste streams by the industry is well established
- The national strategy has included the extended producer responsibility (EPR), e.g. for packaging waste
- Strategy outlines the scheme for EPR to be set up by the producer together with the municipality, including financing

Isa Memia

- Based on legislation, there are rules defined for each waste stream, including the EPR, financing and municipal financing
- Legislation remains to be implemented since legally the framework is defined
- Strategy is planning a 2 bin-system in urban areas and 1 bin for rural areas to encourage home composting
- Important is to find the way that the standard is fulfilled

Fier Municipality

- Collection of separate waste streams needs high awareness

Lushnja Municipality

- Not in a decision-making position, but our territory starts from Rrogozhina road and is quite extended beyond the centre which is a measure for the distance defining the need for a TS
- TS for Lushnja municipality should be taken into consideration

Isa Memia

- In Fier waste zone we need to have the study of the regional long distance transport elaborated and also elaborate how the costs and the management of the incineration will be carried out after the 6 years of the concessionary contract

Alba Dakoli Wilson

- Are there any comments or changes that should be reflected in the current Fier Waste Zone Consolidated Investment Measures

All participants

- We agree with the proposal as it is
- No further comments or need for changes, apart from looking into the possibility of adding a TS for Lushnja municipality

4 Closing of the meeting

The representative of Fier Prefecture had closing words at the end of the meeting, thanking the participants for the input and discussion and the consultant for the presentation and explanations.

INFRASTRUKTUR & UMWELT
4th July 2018

Gernod Dilewski (Consultant, Team Leader)

Annex 1: Agenda

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Integrated Solid Waste Management (ISWM) in Albania
Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management

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Public Consultation on the Waste Master Plan and "Strategic Environmental Assessment" pursuant to the Law no. 146/2014, "On Notification and Public Consultation"

Wednesday, 04 July 2018 (10:00 – 13:30 hours)

Address: Conference Room, Fier Hotel, Fier, Albania

Background:

KfW has commissioned INFRASTRUKTUR & UMWELT, COWI and FLAG with the implementation of consulting services for the above mentioned project. The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

The specific objectives of the Sector Study are

- to determine the proper methodology and technology for future investments in the SWM sector
- to determine the proper costs and tariffs
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments

- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/or disposal facilities
- to propose the necessary legal and institutional changes
- to propose any other accompanying measures

The workshop is intended to present and discuss

- the consolidated investment measures in each waste zone
- overall costs of “regional” and “local” investments
- operational costs of “regional” and “local” activities, as well as relevant household tariffs

AGENDA

9:45	Registration
10:00	**Welcome note** Ministry of Infrastructure and Energy
10:15	**Welcome note and introduction to the Workshop Objectives** Consultant
10:30	**Self-introduction of Participants**
10:45	**Presentation of the Sector Study for Investment Demand in ISWM (Waste Master Plan)** Consultant
11:30	**Consolidated Investment Measures for Waste Zones** Consultant
12:00	***- Coffee break -***
12:30	**Discussion**
13:20	**Closure of the Meeting** Ministry of Infrastructure and Energy
13:30	***- Working lunch -***

Annex 2: Participants List

INFRASTRUKTUR & UMWELT
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Integrated Solid Waste Management (ISWM) in Albania
Public Consultation on the Waste Master Plan and the Strategic Environmental Assessment

Wednesday, 4 July 2018 (10:00-13:30)
Address: Hotel "Fieri", Fier

No.	Emri/ Name	Mbiemri/ Surname	Pozicioni/ Position	Institucioni/ Institution	Email	Telefon	Konfirmimi per dreke/Confirmation for lunch
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5	Urben	Velo	[illegible]	Prefektura Fier	[illegible]@gmail.com	0692456455	+
6	Mana	Veizi	Sp. Min. MIE	Ministria	[illegible]@infrastruktura.gov.al	065[illegible]	+
7	Isa	Memia	MIE	Specialist	[illegible]@infrastruktura.gov.al	[illegible]	+
8	Anila	[illegible]	MIE	[illegible]	anila.[illegible]@infrastruktura.gov.al	[illegible]	
9	[illegible]	Troka	Spec. Mjedisi	Bashkia Patos	[illegible].troka@gmail.com	0683130030	+
10	Irena	Sinani	SNL për mjedisin	Bashkia [illegible]	[illegible]	0658986281	+
11	[illegible]	[illegible]	Kryetar	Bashkia [illegible]	[illegible]@gmail.com	06[illegible]	+
12							
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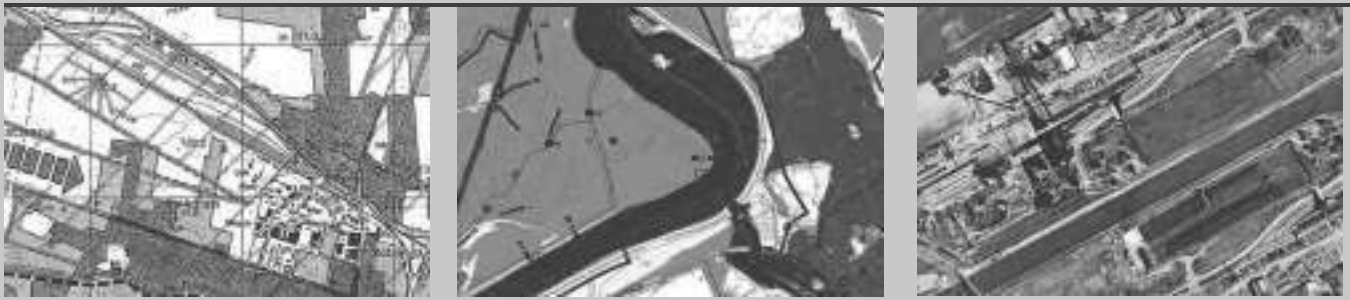
Annex 3: Presentation

THINK CREATIVELY | PLAN FLEXIBLY | IMPLEMENT RELIABLY



Integrated Solid Waste Management in Albania -
Sector Study for Investment Demand (ISWM Masterplan)

Consultation Meeting with Local Stakeholders
Waste Zone Fier

Fier, 4 July 2018

INFRASTRUKTUR & UMWELT
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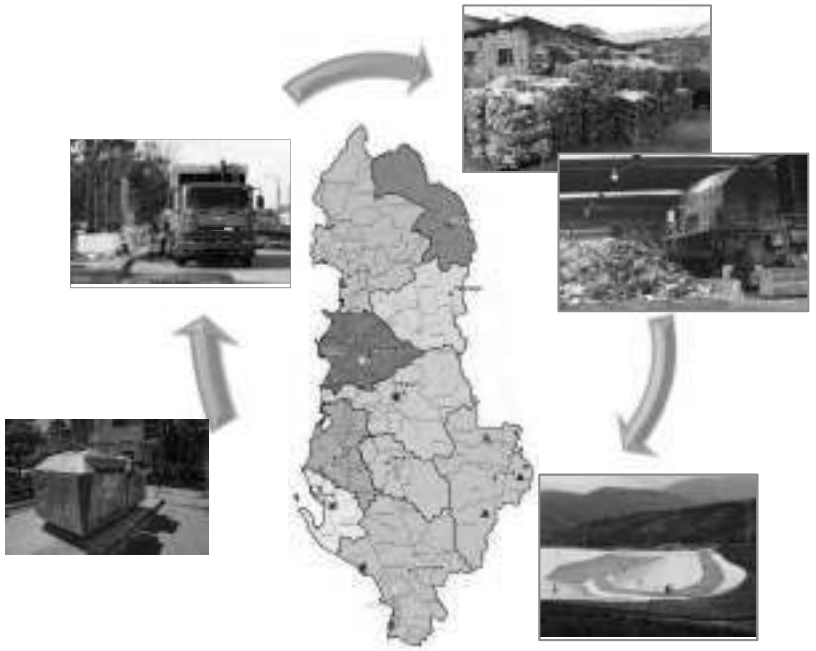
Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Fier



Background of the ISWM Masterplan

The Sector Study for Investment Demand for Integrated Waste Management in Albania is

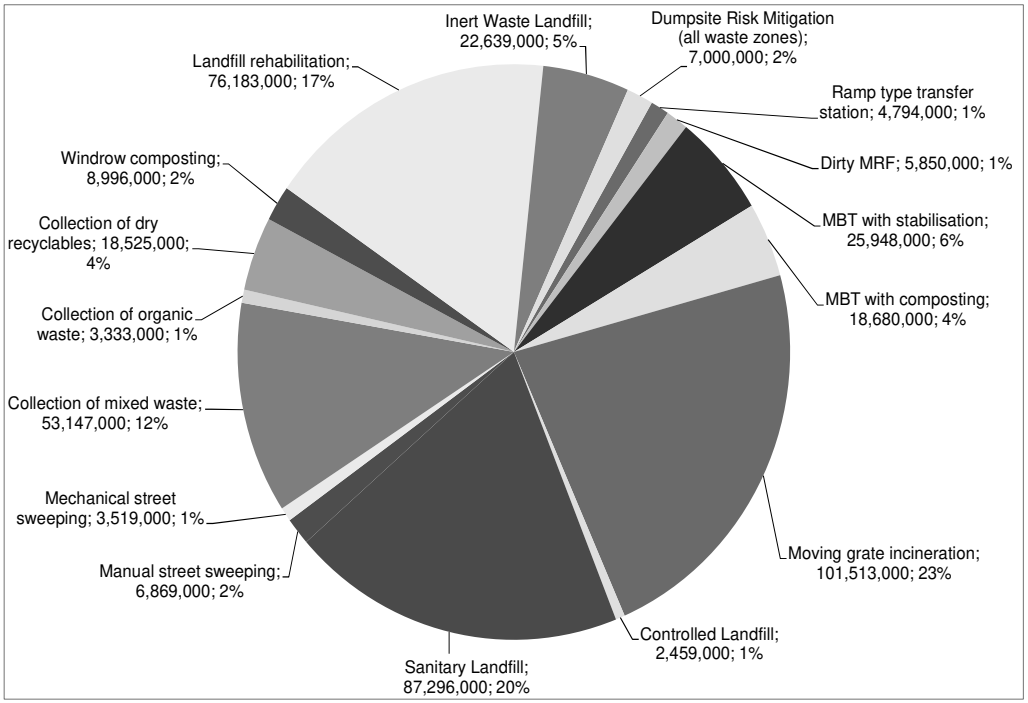
- prepared by the Ministry of Infrastructure and Energy (MoIE)

- financed by the German Development Bank KfW

KFW

Background of the ISWM Masterplan

- Main objectives:
  - to determine the proper methodology and technology for future investments in the SWM sector
  - to determine the proper costs and tariffs
  - to provide a phased investment plan for local and regional ISWM infrastructure
  - to propose necessary legal and institutional changes



Background of the ISWM Masterplan

- All regions have been visited at the start of the project in the first half of 2017, to discuss
  - the current situation of waste management services
  - main challenges
  - ongoing plans and initiatives

- An inter-ministerial working group has been established with representatives from MoIE and MoTE for the preparation of the ISWM Masterplan

- The Draft ISWM Masterplan will now be discussed with stakeholders before preparation of the final version of the Masterplan

Background of the ISWM Masterplan

The main purpose of the today's meeting is to give the municipalities the opportunity to comment on the

- proposed **waste zones** and
- foreseen **investment measures for regional investment**

in order to consider the opinion of the municipalities in the preparation of the final **ISWM Masterplan**

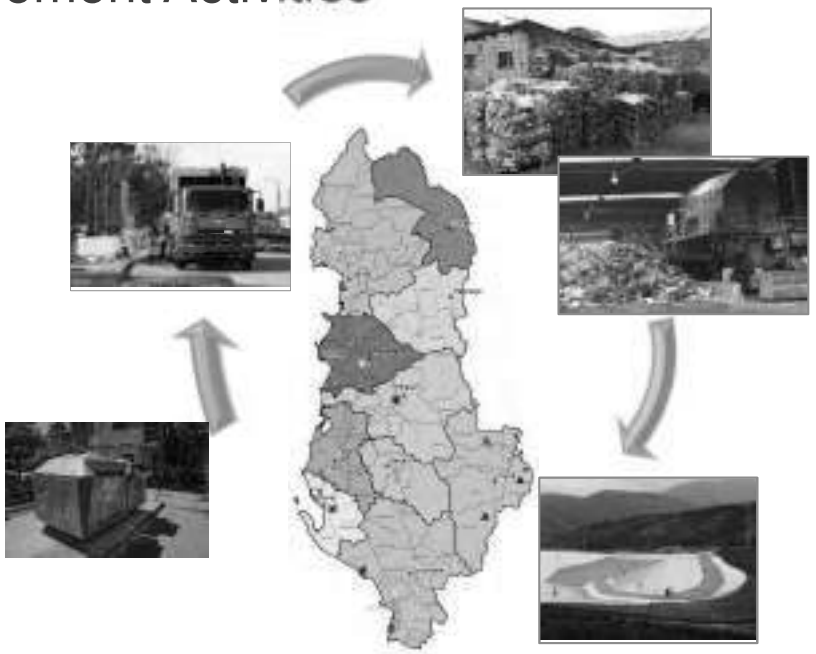
Content of the Presentation

1. Background of the ISWM Masterplan

2. Planning Criteria
   - Key Areas for Improved Waste Management
   - Economy of Scale
   - Regional and Local Waste Management Activities

3. Proposed Waste Zones

4. Waste Zone Fier

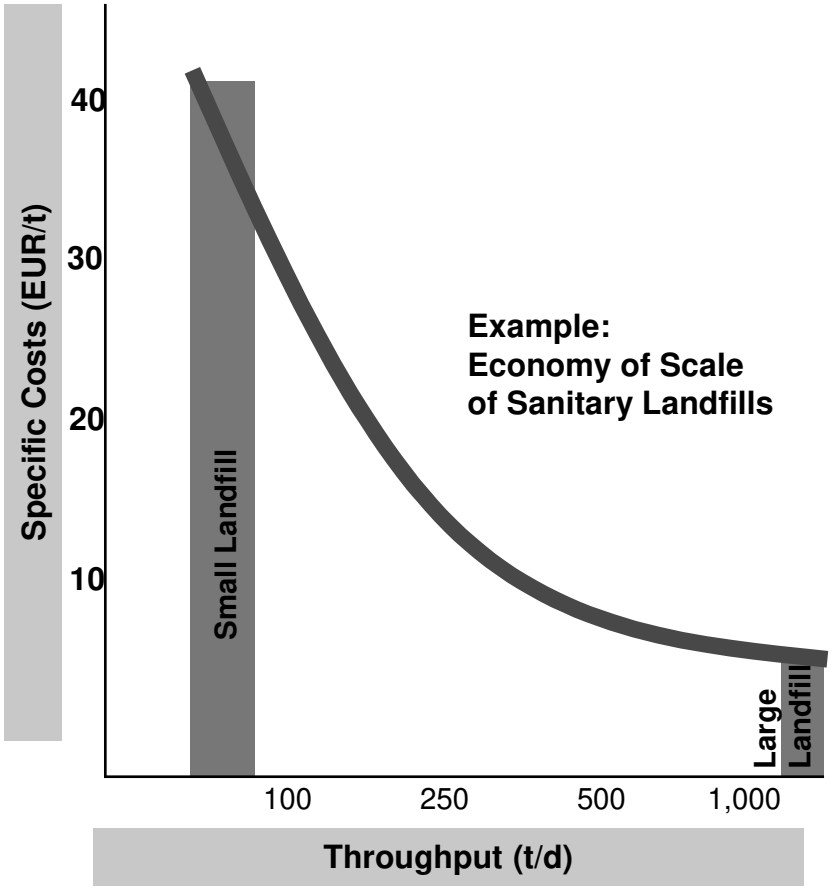


Key Areas for Improved Waste Management

- Besides improvement of **waste collection** and **disposal**, Albania as an EU candidate country is obliged to comply with **EU standards for SWM**.
- These have been transferred into Albanian legislation and focus on **waste recovery** and **treatment**
  - Recovery and recycling of 50% of the waste stream (WM Strategy)
  - Treatment of organic waste before disposal (EU landfill directive)

Economy of Scale

- Total specific costs of waste facilities decrease with increasing throughput
- Minimum throughput for an economic operation
  (e.g. 100 t/d for sanitary landfills)



„Regional“ Waste Management Activities

The following components are considered as “regional”:

– Transfer and Transport

– Treatment of Residual Waste (including Mechanical Biological Treatment and Incineration)

– Sanitary Landfills

„Local“ Waste Management Activities

The following components are considered as “local”:

- Street sweeping and waste collection

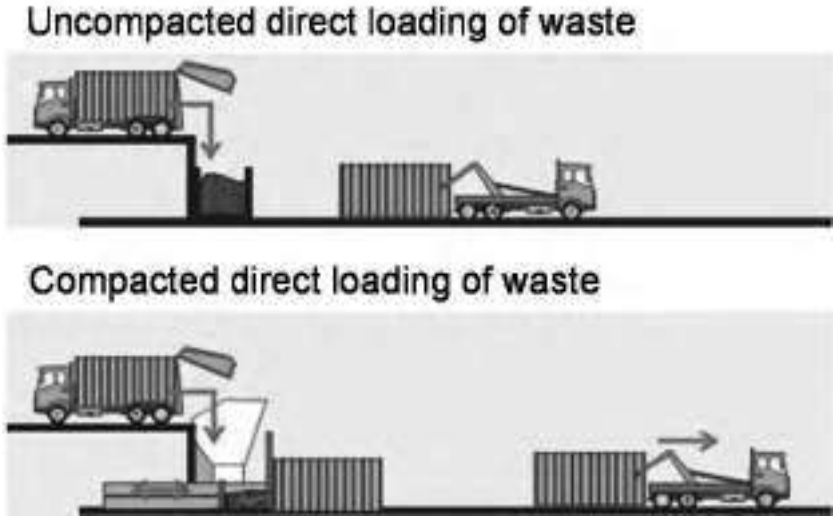
- Separate collection and processing of recyclables and organic waste

- Landfills for construction waste (inert waste)

- Rehabilitation of dumpsites

Waste Transfer: Transfer Station

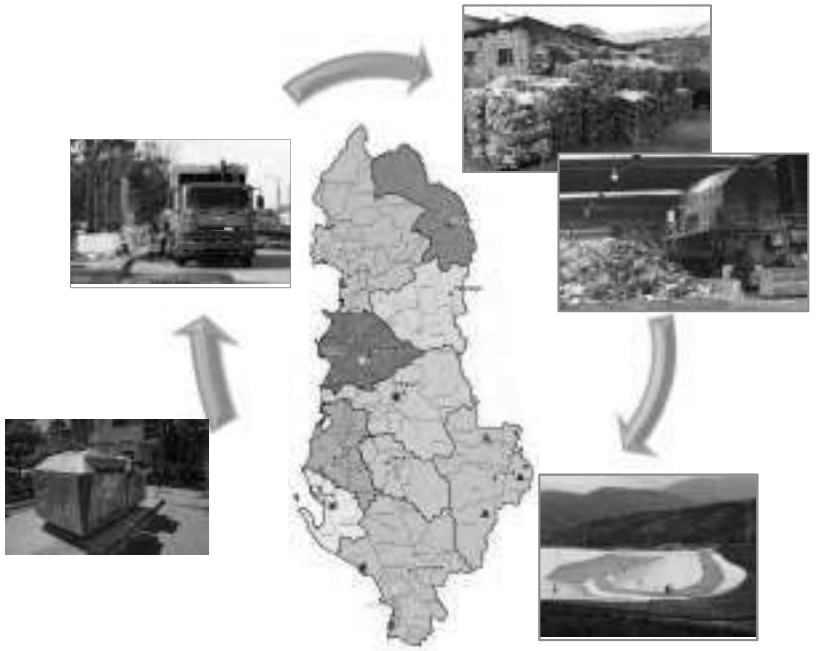
- Purpose of waste transfer for long distance transport:
  - Better utilisation of collection vehicles
  - Connection of small settlements
  - Less operating and maintenance costs
  - Less traffic / less emissions



- Implementation of transfer stations is recommendable for locations with > 30 km transport distance

Content of the Presentation

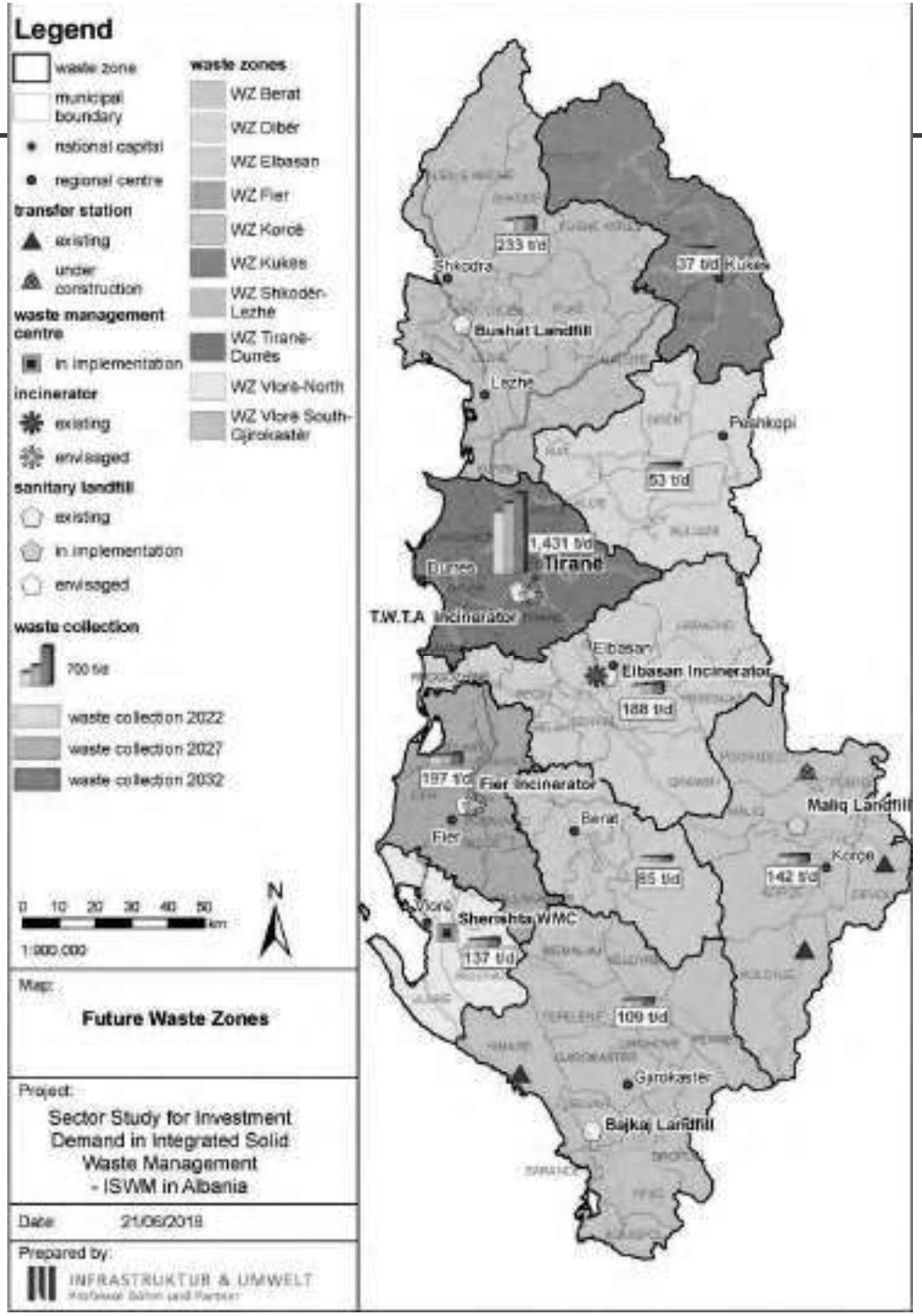
1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Fier



Proposed Waste Zones

Criteria for demarcation of waste zones:

- Spatial structure
- Accessibility
- Population size and development
- Waste amount



Proposed Waste Zone Fier

* Incinerator incl. sanitary landfill;
TS: Transfer Station, for a transport distance > 30 km

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Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Fier
   - Regional Investment Measures
   - Investment and Annual Operating Costs for Regional Facilities
   - Investment and Annual Operating Costs for Local Facilities
   - Specific Costs and Household Tariffs

Waste Zone Fier

Municipality	Waste Amount (Collected Waste)		
	2022	2027	2032
Divjakë	7 t/d	10 t/d	12 t/d
Fier	80 t/d	87 t/d	94 t/d
Lushnjë	41 t/d	45 t/d	49 t/d
Mallakastër	9 t/d	11 t/d	12 t/d
Patos	19 t/d	20 t/d	21 t/d
Roskovec	7 t/d	9 t/d	10 t/d
TOTAL	**164 t/d**	**181 t/d**	**197 t/d**

* Incinerator incl. sanitary landfill;
TS: transfer station

WZ Fier: Regional Investment Measures

- Existing and planned regional waste facilities for Waste Zone Fier

Waste Zone: WZ Fier

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Key Specifications	Phase 1	Phase 2	Phase 3
Population	354,527	347,408	340,909
Collected Municipal Waste Quantity [t/a]	59,809	66,187	71,992
Amount of recycables [t/a]	20,335	22,504	24,477
Amount of organic waste [t/a]	29,905	33,094	35,996
Share of Urban Waste	75%	71%	68%
Inert Waste Quantity [t/a]	66,558	65,239	64,037

Regional Facilities	Priority	Current Status	Phase 1	Phase 2	Phase 3	Known Costs [EUR]
Long Distance Transport						
Ramp type transfer station			3	Existing	Existing	
Waste Treatment						
Moving grate incineration		In planning stage	1	Existing	Existing	25,512,000
Waste Disposal						
Sanitary Landfill		In planning stage	1	Extension	Extension	3,000,000

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Fier: Investment Costs for Regional Facilities

Investment costs for regional facilities	WZ Fier	Currency EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	600,000		
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation			
MBT with composting			
Anaerobic Digestion (AD)			
Moving grate incineration	25,512,000		
Waste Disposal			
Controlled Landfill			
Sanitary Landfill	3,000,000	4,567,000	4,968,000

Total Investment Costs for Regional Facilities	**29,112,000**	**4,567,000**	**4,968,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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WZ Fier: Annual Operating Costs for Regional Facilities

Annual operating costs for regional facilities	WZ Fier	Currency
		EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	52,000	62,000	72,000
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation			
MBT with composting			
Anaerobic Digestion (AD)			
Moving grate incineration *		unknown	unknown
Waste Disposal			
Controlled Landfill			
Sanitary Landfill			

Total Operating Costs for Regional Facilities	52,000	unknown	unknown

* No gate fees for the duration of concession contract (2018 – 2023); Potential gate fees from 2024 until 2032 are unknown

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Fier: Investment Costs for Local Facilities

Investment costs for local SWM components	WZ Fier	Currency
		EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	133,000	137,000	160,000
Mechanical street sweeping	43,000	93,000	126,000
Waste Collection			
Collection of mixed waste	1,400,000	1,602,000	1,719,000
Collection of organic waste			
Collection of dry recyclables	385,000	227,000	246,000
Local Facilities			
Clean MRF			
Windrow composting			
Fully automated in-house composting plant			
Landfill rehabilitation		1,579,000	7,221,000
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	1,030,000	491,000	548,000

Total Investment Costs for Local SWM Components	**2,991,000**	**4,129,000**	**10,020,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Fier: Annual Operating Costs for Local Facilities

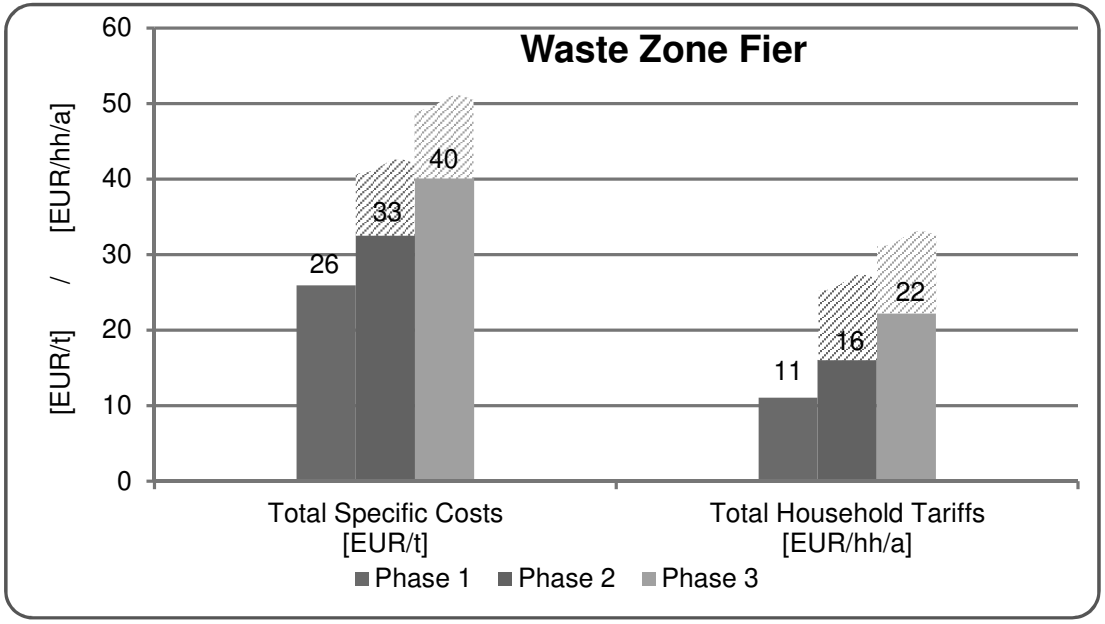
Annual operating costs for local SWM components	WZ Fier	Currency
		EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	325,400	359,700	405,700
Mechanical street sweeping	40,500	66,300	95,500
Waste Collection			
Collection of mixed waste	657,300	727,800	792,200
Collection of organic waste			
Collection of dry recyclables	47,900	53,200	57,800
Local Facilities			
Clean MRF			
Windrow composting			
Fully automated in-house composting plant			
Landfill rehabilitation		8,300	38,100
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	59,500	87,700	119,100

Total Operating Costs for Local SWM Components	**1,130,600**	**1,303,000**	**1,508,400**

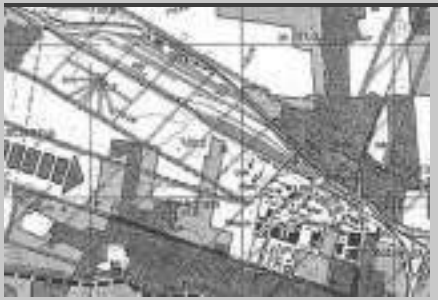
Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Fier: Specific Costs and Household Tariffs



Assumptions for tariff calculation:

- SWM costs financed:
  80% by households & 20% by commercial entities
- Fee payment from all households
- Costs for the investment of regional measures and dumpsite rehabilitation are covered from other sources



Thank you very much!

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9.3.4 Annex 3.4: Minutes of Waste Zone Meeting Tirana-Durres

Meeting Notes

Project:	Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management in Albania
Theme/objective:	Waste Zone meeting Tiranë-Durrës local stakeholders
Location:	Premium Hotel meeting room, Golem
Date:	Thursday, 5th July 2018
Time:	See Agenda (Annex 1)
Participants:	See participants list (Annex 2)
Distribution list:	Ministry of Infrastructure and Energy (MoIE) Ministry of Tourism and Environment (MoTE) KfW Development Bank Consultant
Author:	Consultant
Annexes:	1. Agenda 2. Participants List 3. Presentation

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Partner
Dipl.-Ing. Gernod Dilewski
Dipl.-Ing. Hans-Jürgen Gräff
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1 Welcome Notes

The meeting started with opening remarks from the Prefect of Durrës and Isa Memia (MoIE). Participants were self-introduced (the list of participants and contact details are enclosed as Annex 2 to the Meeting Notes).

Gernod Dilewski (IU) welcomed all participants on behalf of the Consultant.

2 Presentation of the Draft ISWM Master Plan

The Consultant presented the following four topics, related to the overall development of the Master Plan and focusing in depth on the particularities of the Tiranë-Durrës Waste Zone:

1. Background of the ISWM Master Plan
2. Planning Criteria for the preparation of the Investment Plan
3. Proposed Waste Zones
4. Consolidated Investment Measures for Tiranë-Durrës

Further details are provided in the presentation attached in Annex 3. Throughout the presentation, the participants were invited to provide comments and feedback.

3 Discussion of ISWM Master Plan and Consolidated Investment Measures for Tiranë-Durrës Waste Zone

Prefect of Durrës

- Waste management is very important issue for the region
- Demonstrated the importance to the Prime Minister, who inspected the waste dump - our key problem
- In 2019 initiative of the government will start the solution, Prime Minister announced that incinerator will start in Sharra along with rehabilitation of the dump site of Durrës

Isa Memia, MoIE

- On behalf of the ministry thank you for your participation in discussing this very important document
- We have organised presentation and consultation meetings in each waste area
- Tiranë and Durrës are proposed to be on the same waste area, with the new Sharra incinerator as the regional facility

Afërdita Ponari, KfW

- Plan preparation since 1.5 years, and serve as a basis for further follow up major initiatives in the waste management area
- German government has supported waste management sector in the country through various initiatives

- Master Plan development is part of the grant financing of KfW

Gernod Dilewski

- Presentation on Sector Study on Investment Demand for Integrated Waste Management, and Consolidated Investment Measures for Tiranë-Durrës Waste Zone (Annex 3)

Isa Memia

- A concessionary contract is already signed and envisaged that other municipalities in facility's neighbourhood become part of it
- The subsidy scheme will be revised with the ratio of government share developing over time
- Envisaged inclusion of other municipalities
- Durrës municipalities will be supported in writing the contract with the concessionary after approval of plan by the NTRC
- Wished there were more support and representation form the municipalities
- Government is trying to acquire various sources of funding particularly for the regional facilities
- Operation needs the support of the municipalities
- Government in discussion with the German government, further financing for the implementation with 50 million Euro is discussed
- Government is trying to support the municipalities that are legally responsible for the management of urban waste

Shijak Municipality

- How far is a transfer station (TS) envisaged for Shijak municipality?

Gernod Dilewski

- TS network still needs a detailed planning
- In the detailed planning several aspects should be considered regarding TS locations
- Waste amounts in Durrës justify 2 TS but need a detailed study to clarify the frame conditions

Regional Public Health Directory

- Does Master Plan envisage anything regarding hospital waste?
- 80 percent of the payment to be covered by the population sounds very sensible, since a good part of the household is not paying and if they did such part of the costs will be covered.
- Can we say what will be the estimated cost per family?

Gernod Dilewski

- This master plan is for municipal waste, excluding hazardous or health care waste
- National Waste Management Strategy envisages master plans for each waste stream

Regional Public Health Directory

- Has the cost of dumpsite rehabilitation been calculated?
- Will the leachate collected be treated in rehabilitated dumpsite?

Durrës Prefect

- We are planning investments on the 3rd phases for inert, but what should be done in first 2 phases?

Gernod Dilewski

- Cost analysis is carried out for dumpsite rehabilitation and included in the Master Plan
- Costs of regional activities are accounted when calculating the investments costs
- Leachate treatment costs are envisaged within the current dumpsite rehabilitation
- Inert waste costs are included in the Master Plan, but operational cost should be covered by the producers

Isa Memia, MoIE

- Costs of regional plants in the presentation are allocated to the central government
- According the law, the tariff approved by municipal councils should cover the waste management costs
- Waste management needs to respect the set standards
- MoIE has currently defined some minimal criteria for temporary depositing for the inert waste, later on permanent inert landfills are envisaged, which are more costly
- Hospital waste and other waste streams should not include costs for the municipalities, since these are not waste fractions collected by the municipalities
- MoTE has prepared an emergency plan fur current dumpsite rehabilitation, to be funded by Central Government
- Further engagement is needed by the municipalities

Durrës Prefect

- This is a very ambitious plan
- Is it planned that government and others take measures to prepare people for plan implementation?
- In addition to the Master Plan we also need to have the local plans

Gernod Dilewski

- Master Plan starts to include separate collection with increasing intensity over the years
- Waste treatment centres have the recycling facility as one of the components
- It is of municipal interest to reduce the waste for the long distance transport

Regional Environmental Directory

- In cooperation with the inspectorate we have started campaigning with businesses
- Restaurants need to have separate contract with the dealers for treating remaining oils

Durrës Municipality

- Are there any plans for monitoring incinerator effluents?

Isa Memia, MoIE

- A monitoring process is included in the incinerator operational plans

Afërdita Ponari, KfW

- KfW supported development of the Master Plan in order to have a streamlined investment in the waste
- A priority investment list will come out of the Master Plan
- Currently KfW has committed 50 mln Euro to support Master Plan implementation
- A grant of 8 mln Euro is also envisaged for supporting waste management in the country

Durrës Prefect

- Beach-cleaning takes over 25% of the budget planned for waste services, and there is no place to take the kelp collected
- Pleased to have the meeting today about the Master Plan
- Pleased that Durrës can be part of the new technology

Alba Dakoli Wilson

- Are there any comments or changes that should be reflected from this meeting in the current Tiranë-Durrës Waste Zone Consolidated Investment Measures?
- As requested the Master Plan draft distributed to the municipalities by MoIE, will be re-sent to all participants signed with emails in the participant list
- Further time available for comments is until the 15th of July
- In discussion with the MoIE comments will be reflected in the final draft of Master Plan

All participants

- At this stage, we agree with the proposal as it is
- Further comments, if applicable, will be provided in writing during the timeframe available for comments

4 Closing of the meeting

The Prefect of Durrës had closing words at the end of the meeting, thanking the participants for the input and discussion and the consultant for the presentation and explanations.

INFRASTRUKTUR & UMWELT
5th July 2018

Gernod Dilewski (Consultant, Team Leader)

Annex 1: Agenda

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner

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Integrated Solid Waste Management (ISWM) in Albania
Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management

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Public Consultation on the Waste Master Plan and "Strategic Environmental Assessment" pursuant to the Law no. 146/2014, "On Notification and Public Consultation"

Thursday, 05 July 2018 (10:00 – 13:30 hours)

Address: Premium Beach Hotel, Golem 2304, Durrës, Albania

www.premiumbeachhotel.com

Background:

KfW has commissioned INFRASTRUKTUR & UMWELT, COWI and FLAG with the implementation of consulting services for the above mentioned project. The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

The specific objectives of the Sector Study are

- to determine the proper methodology and technology for future investments in the SWM sector
- to determine the proper costs and tariffs
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments

- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/or disposal facilities
- to propose the necessary legal and institutional changes
- to propose any other accompanying measures

The workshop is intended to present and discuss

- the consolidated investment measures in each waste zone
- overall costs of “regional” and “local” investments
- operational costs of “regional” and “local” activities, as well as relevant household tariffs

AGENDA

9:45	Registration
10:00	**Welcome note** Ministry of Infrastructure and Energy
10:15	**Welcome note and introduction to the Workshop Objectives** Consultant
10:30	**Self-introduction of Participants**
10:45	**Presentation of the Sector Study for Investment Demand in ISWM (Waste Master Plan)** Consultant
11:30	**Consolidated Investment Measures for Waste Zones** Consultant
12:00	***- Coffee break -***
12:30	**Discussion**
13:20	**Closure of the Meeting** Ministry of Infrastructure and Energy
13:30	***- Working lunch -***

Annex 2: Participants List

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner

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Integrated Solid Waste Management (ISWM) in Albania
Public Consultation on the Waste Master Plan and the Strategic Environmental Assessment

Thursday, 5 July 2018 (10:00-13:30)
Address: Premium Beach Hotel, Golem, Durres

No.	Emri/ Name	Mbiemri/ Surname	Pozicioni/ Position	Institucioni/ Institution	Email	Telefon	Konfirmim per dreke/Confirmation for lunch
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	Nazmi	Hoxha	Nëpunës	Bashkia Shijak	nazmi.hoxha@yahoo.com	0674228503	[illegible]

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Professor Böhm und Partner
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Integrated Solid Waste Management (ISWM) in Albania
Public Consultation on the Waste Master Plan and the Strategic Environmental Assessment

Thursday, 5 July 2018 (10:00-11:30)
Address: Premium Beach Hotel, Golem, Durres

No.	Emri/ Name	Mbiemri/ Surname	Pozicioni/ Position	Institucioni/ Institution	Email	Telefon	Konfirmimi per dreke/Confirmation for lunch
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15	Jani	TATI	Përgj. Sekt [illegible]	[illegible] Bashkia [illegible]	[illegible]@gmail.com	0683850382	✓ [illegible]
16	Merushe	Cali	Specialiste Mjedisi	Bashkia Shijak	merushe.cali@gmail.com	0693871350	[illegible]
17	Albanise	Semini	Specialiste Mjedisi	Bashkia Durrës	[illegible]@yahoo.com	06836[illegible]3[illegible]	[illegible]
18	Rudina	Velishaj	Specialist Mjedisi	Bashkia Durrës	[illegible]@yahoo.com	0692946387	[illegible]
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20	Allan	Uka	Specialist [illegible]	Bashkia Tiranë	[illegible]@yahoo.com	069[illegible]	[illegible]
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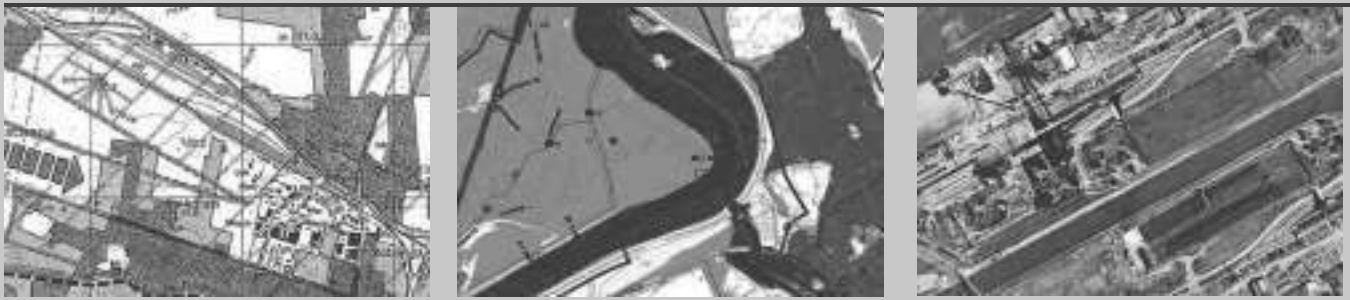
Annex 3: Presentations

THINK CREATIVELY | PLAN FLEXIBLY | IMPLEMENT RELIABLY



Integrated Solid Waste Management in Albania -
Sector Study for Investment Demand (ISWM Masterplan)

Consultation Meeting with Local Stakeholders
Waste Zone Tiranë-Durrës

Golem, 5 July 2018

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner

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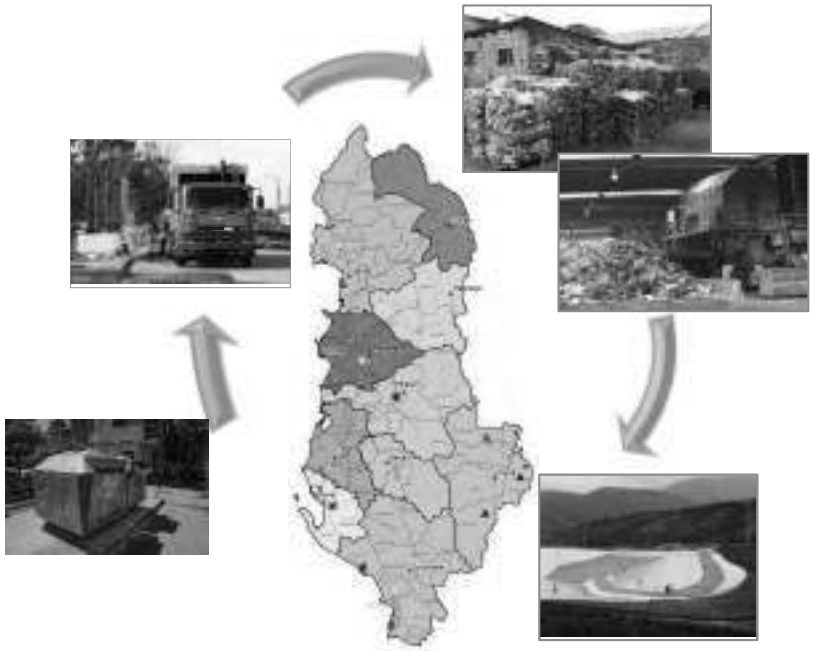
Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Tiranë-Durrës



Background of the ISWM Masterplan

The Sector Study for Investment Demand for Integrated Waste Management in Albania is

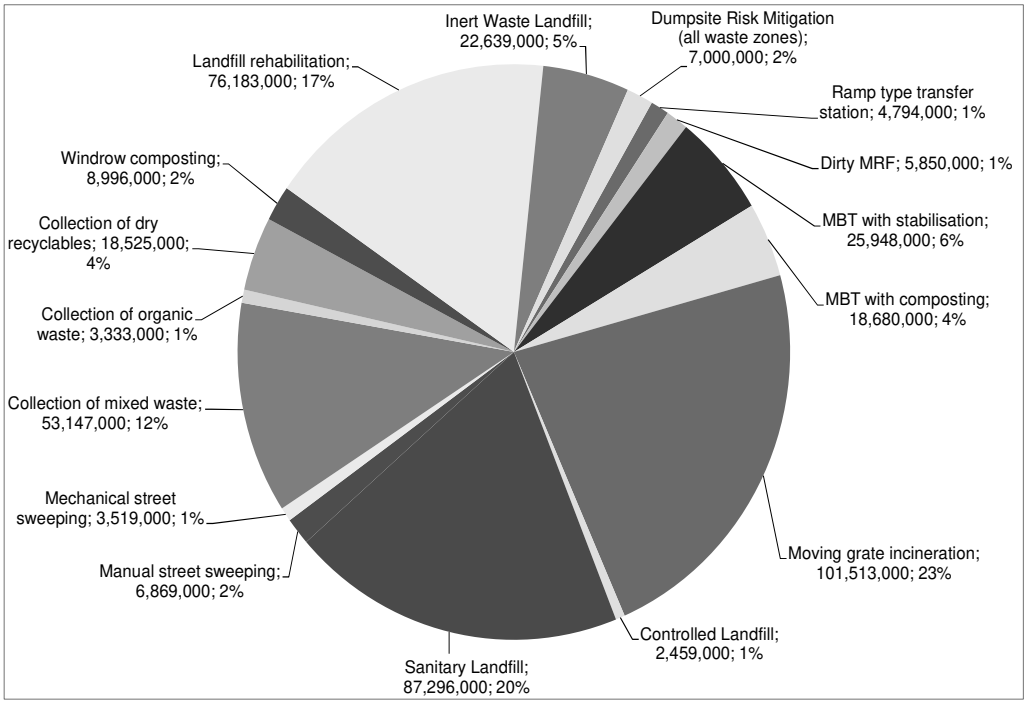
- prepared by the Ministry of Infrastructure and Energy (MoIE)

- financed by the German Development Bank KfW

KFW

Background of the ISWM Masterplan

- Main objectives:
  - to determine the proper methodology and technology for future investments in the SWM sector
  - to determine the proper costs and tariffs
  - to provide a phased investment plan for local and regional ISWM infrastructure
  - to propose necessary legal and institutional changes



Background of the ISWM Masterplan

- All regions have been visited at the start of the project in the first half of 2017, to discuss
  - the current situation of waste management services
  - main challenges
  - ongoing plans and initiatives

- An inter-ministerial working group has been established with representatives from MoIE and MoTE for the preparation of the ISWM Masterplan

- The Draft ISWM Masterplan will now be discussed with stakeholders before preparation of the final version of the Masterplan

Background of the ISWM Masterplan

The main purpose of the today's meeting is to give the municipalities the opportunity to comment on the

- proposed **waste zones** and
- foreseen **investment measures for regional investment**

in order to consider the opinion of the municipalities in the preparation of the final **ISWM Masterplan**

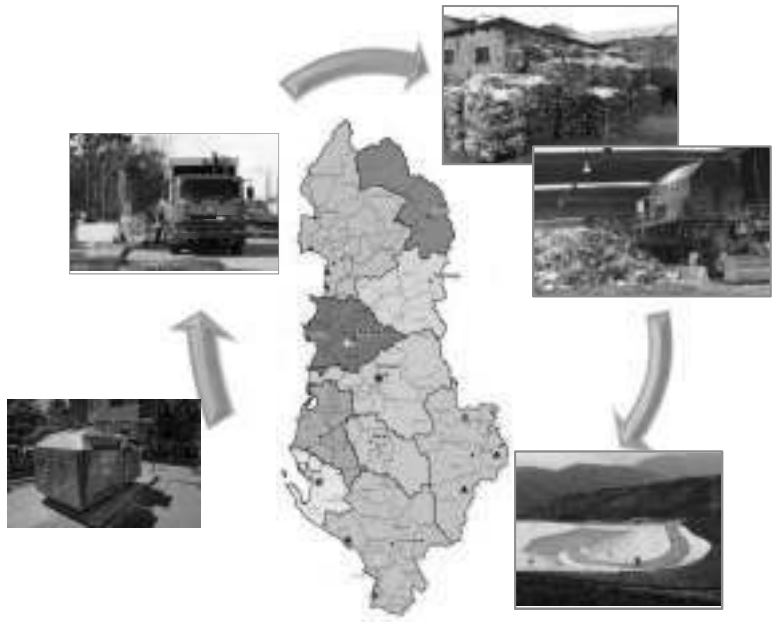
Content of the Presentation

1. Background of the ISWM Masterplan

2. Planning Criteria
   - Key Areas for Improved Waste Management
   - Economy of Scale
   - Regional and Local Waste Management Activities

3. Proposed Waste Zones

4. Waste Zone Tiranë-Durrës

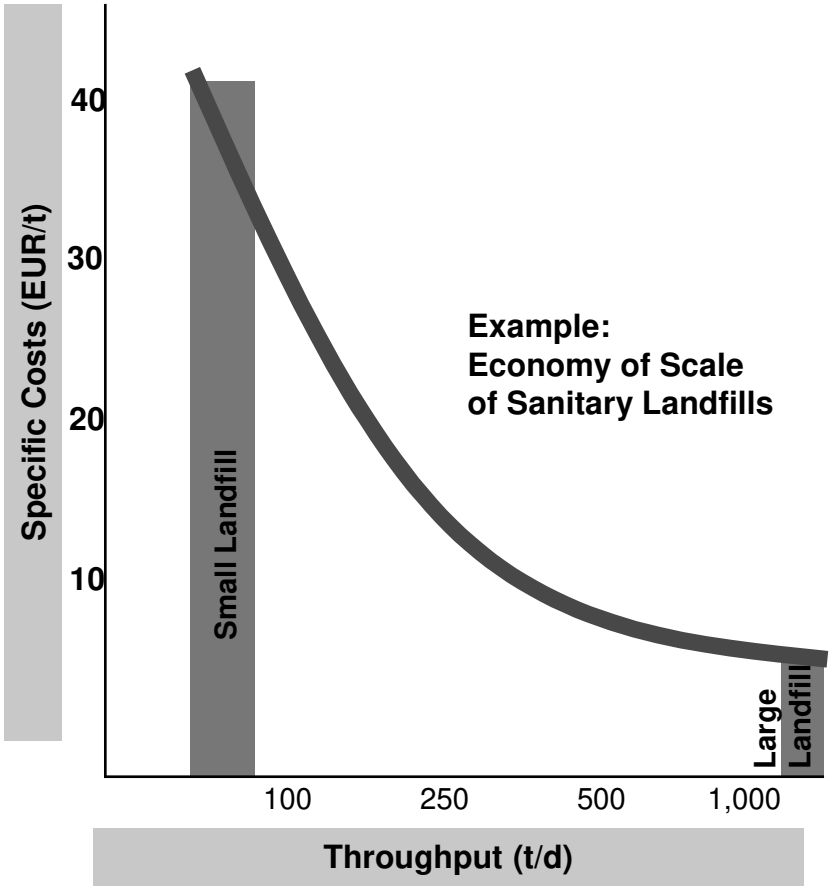


Key Areas for Improved Waste Management

- Besides improvement of **waste collection** and **disposal**, Albania as an EU candidate country is obliged to comply with **EU standards for SWM**.
- These have been transferred into Albanian legislation and focus on **waste recovery** and **treatment**
  - Recovery and recycling of 50% of the waste stream (WM Strategy)
  - Treatment of organic waste before disposal (EU landfill directive)

Economy of Scale

- Total specific costs of waste facilities decrease with increasing throughput
- Minimum throughput for an economic operation
  (e.g. 100 t/d for sanitary landfills)



„Regional“ Waste Management Activities

The following components are considered as “regional”:

– Transfer and Transport

– Treatment of Residual Waste (including Mechanical Biological Treatment and Incineration)

– Sanitary Landfills

„Local“ Waste Management Activities

The following components are considered as “local”:

- Street sweeping and waste collection

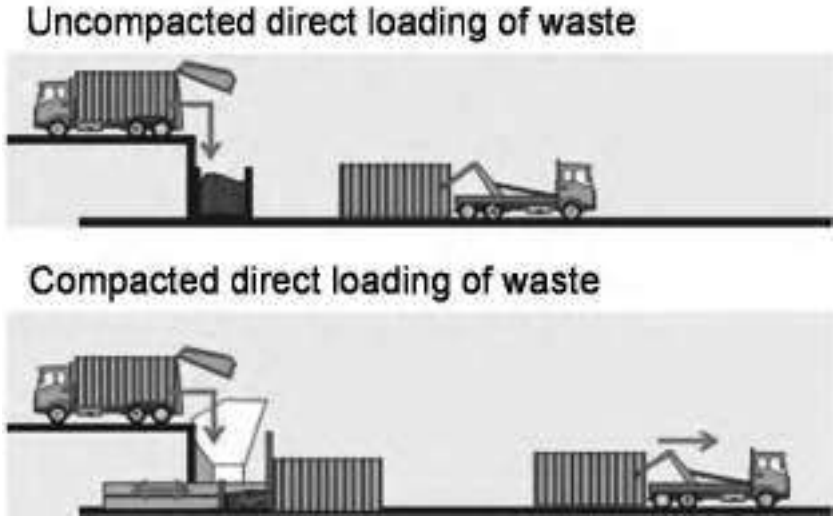
- Separate collection and processing of recyclables and organic waste

- Landfills for construction waste (inert waste)

- Rehabilitation of dumpsites

Waste Transfer: Transfer Station

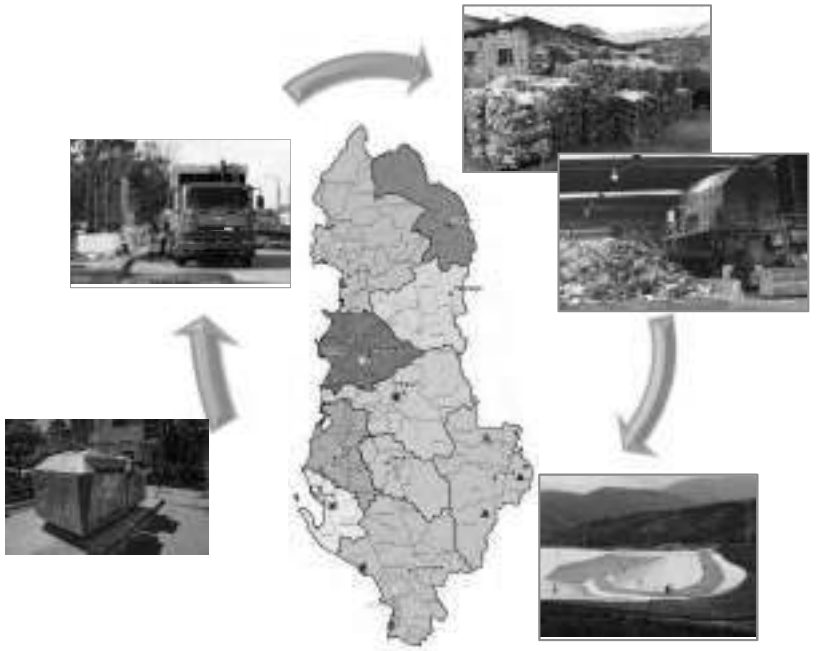
- Purpose of waste transfer for long distance transport:
  - Better utilisation of collection vehicles
  - Connection of small settlements
  - Less operating and maintenance costs
  - Less traffic / less emissions



- Implementation of transfer stations is recommendable for locations with > 30 km transport distance

Content of the Presentation

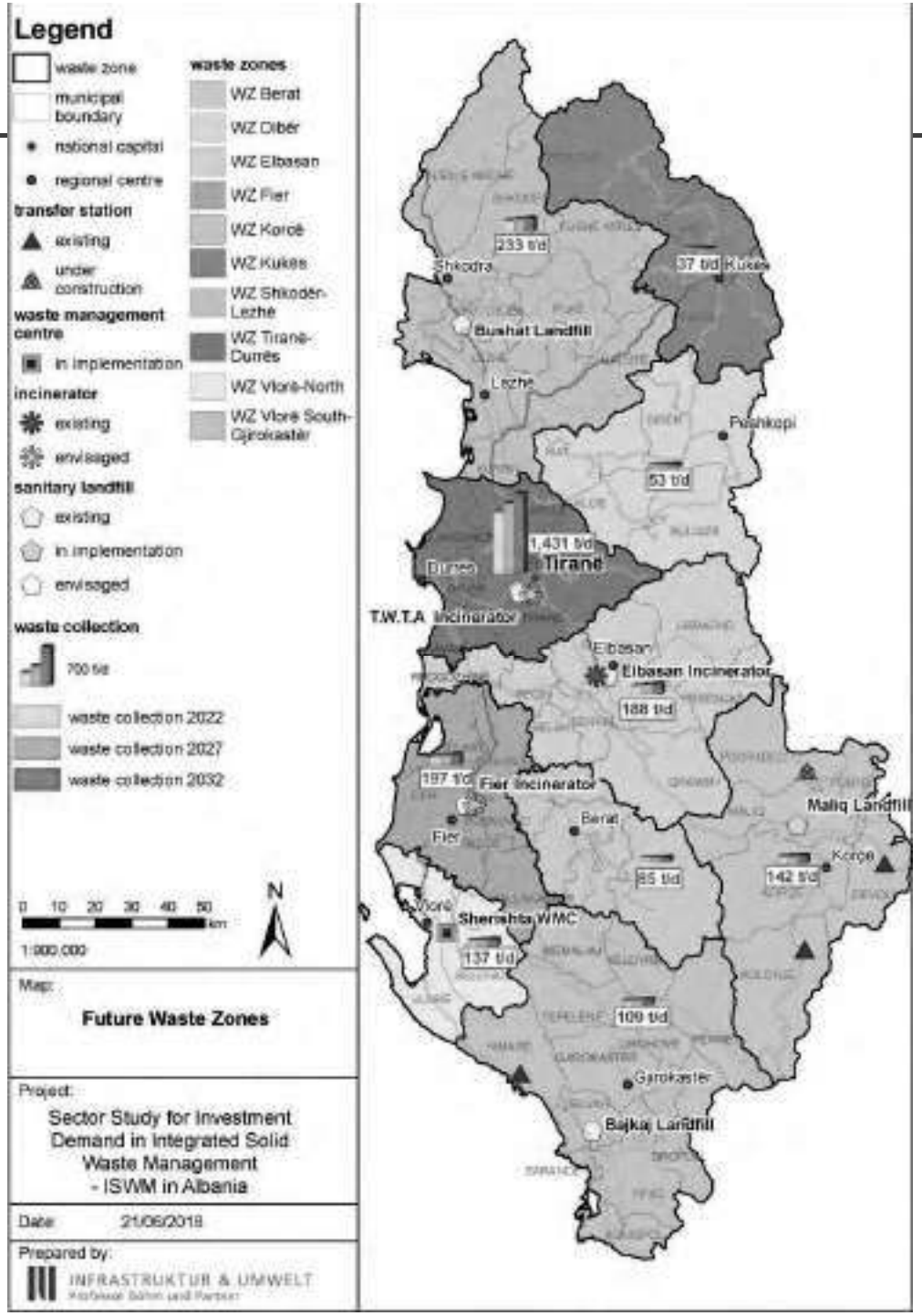
1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Tiranë-Durrës



Proposed Waste Zones

Criteria for demarcation of waste zones:

- Spatial structure
- Accessibility
- Population size and development
- Waste amount



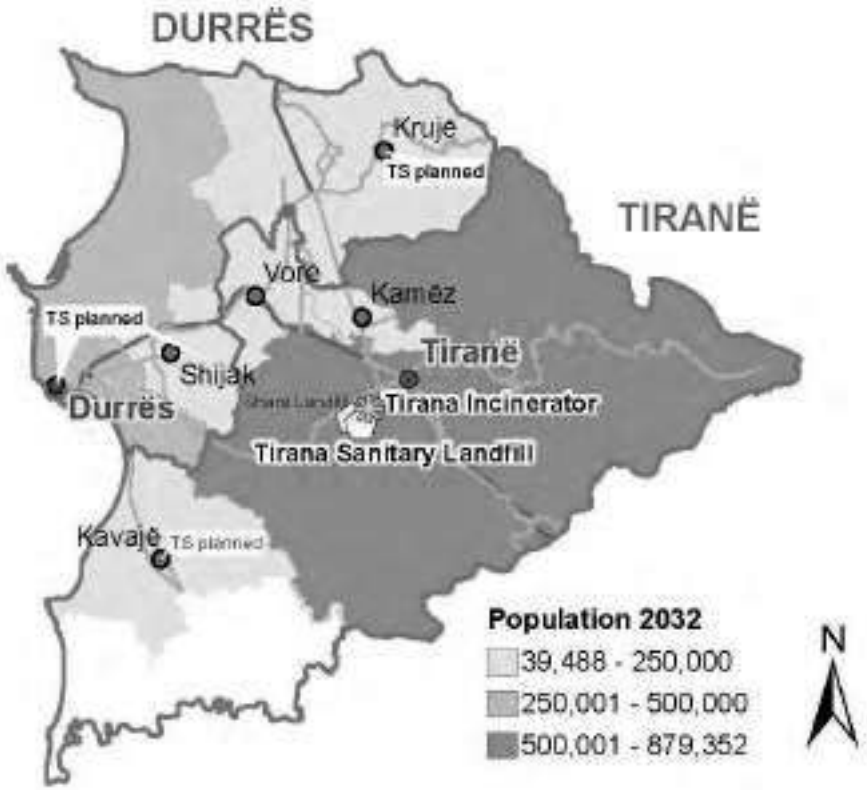
Proposed Waste Zone Tiranë-Durrës

*TS: Transfer Station
for a transport distance > 30 km

Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Tiranë-Durrës
   - Regional Investment Measures
   - Investment and Annual Operating Costs for Regional Facilities
   - Investment and Annual Operating Costs for Local Facilities
   - Specific Costs and Household Tariffs

Waste Zone Tiranë-Durrës



Municipality	Waste Amount (Collected Waste)		
	2022	2027	2032
Durrës	192 t/d	216 t/d	241 t/d
Krujë	42 t/d	47 t/d	52 t/d
Shijak	20 t/d	22 t/d	25 t/d
Kamëz	80 t/d	91 t/d	105 t/d
Kavajë	39 t/d	46 t/d	52 t/d
Tiranë	707 t/d	812 t/d	930 t/d
Vorë	21 t/d	24 t/d	27 t/d
TOTAL	**1,101 t/d**	**1,257 t/d**	**1,431 t/d**

WZ Tiranë-Durrës: Regional Investment Measures

- Existing and planned regional waste facilities for Waste Zone Tiranë-Durrës

Waste Zone:	WZ Tirane-Durrës			LOAD Default Data	LOAD Saved Data	Delete Saved Data	Save Input
Key Specifications			**Phase 1**	**Phase 2**	**Phase 3**		
Population			1,323,703	1,424,982	1,534,557		
Collected Municipal Waste Quantity [t/a]			401,935	458,820	522,279		
Amount of recycables [t/a]			136,658	155,999	177,575		
Amount of organic waste [t/a]			200,968	229,410	261,139		
Share of Urban Waste			98%	98%	98%		
Inert Waste Quantity [t/a]			1,364,449	1,470,352	1,584,999		
Regional Facilities	**Priority**	**Status**	**Phase 1**	**Phase 2**	**Phase 3**	**Known Costs [EUR]**	
Long Distance Transport							
Ramp type transfer station			3	Existing	Existing		
Waste Treatment							
Dirty MRF		In planning stage	1	Existing	Existing	1,650,000	
Moving grate incineration		In planning stage	1	Existing	Existing	76,000,880	
Waste Disposal							
Sanitary Landfill		In planning stage	1	Existing	Extension	22,585,000	

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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WZ Tiranë-Durrës: Investment Costs for Regional Facilities

Investment costs for regional facilities	WZ Tirane-Durrës	Currency
		EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	1,594,000		
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF	1,650,000		
MBT with AD			
MBT with stabilisation			
MBT with composting			
Anaerobic Digestion (AD)			
Moving grate incineration	76,001,000		
Waste Disposal			
Controlled Landfill			
Sanitary Landfill	22,585,000		

Total Investment Costs for Regional Facilities	**101,830,000**		

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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WZ Tiranë-Durrës: Annual Operating Costs for Regional Facilities

Annual operating costs for regional facilities	WZ Tirane-Durrës	Currency
		EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	519,000	552,000	618,000
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation			
MBT with composting			
Anaerobic Digestion (AD)			
Moving grate incineration	11,656,120	13,305,792	15,146,077
Waste Disposal			
Controlled Landfill			
Sanitary Landfill			

Total Operating Costs for Regional Facilities	**12,175,120**	**13,857,792**	**15,764,077**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Tiranë-Durrës: Investment Costs for Local Facilities

Investment costs for local SWM components	WZ Tirane-Durrës	Currency EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	1,160,000	1,267,000	1,446,000
Mechanical street sweeping	381,000	825,000	1,186,000
Waste Collection			
Collection of mixed waste	8,511,000	9,154,000	10,867,000
Collection of organic waste			
Collection of dry recyclables	2,281,000	4,065,000	3,320,000
Local Facilities			
Clean MRF			
Windrow composting			
Fully automated in-house composting plant			
Landfill rehabilitation	13,235,000	8,376,000	15,108,000
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	9,870,000	1,398,000	1,561,000

Total Investment Costs for Local SWM Components	**35,438,000**	**25,085,000**	**33,488,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Tiranë-Durrës: Annual Operating Costs for Local Facilities

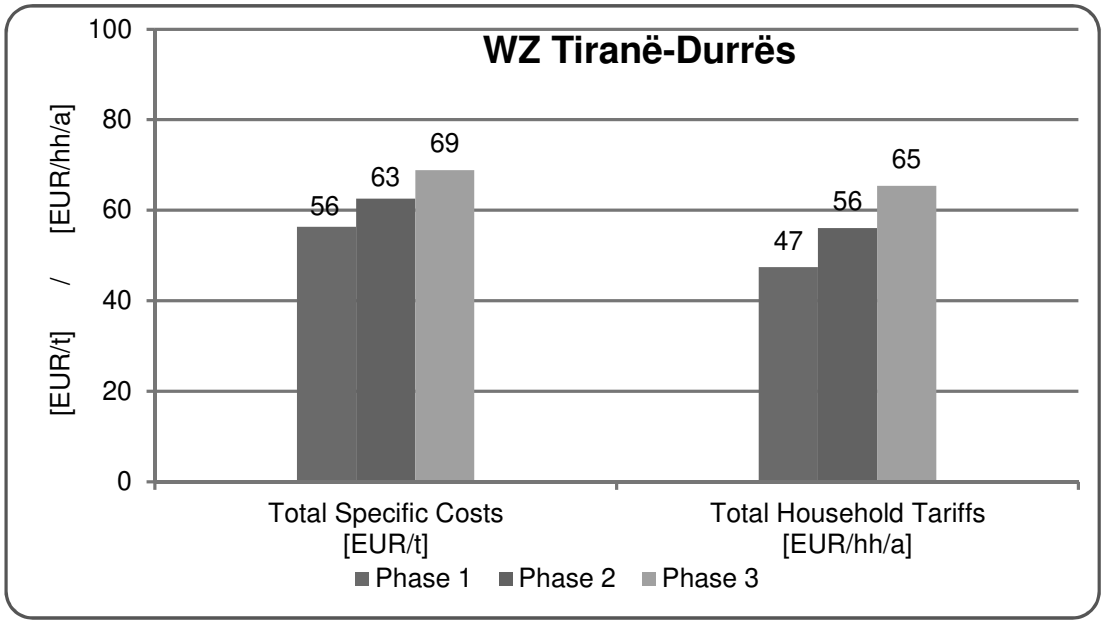
Annual operating costs for local SWM components	WZ Tirane-Durrës	Currency
		EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	2,714,300	3,113,900	3,562,000
Mechanical street sweeping	339,800	582,600	885,300
Waste Collection			
Collection of mixed waste	3,935,200	4,255,200	4,842,900
Collection of organic waste			
Collection of dry recyclables	285,200	650,200	739,600
Local Facilities			
Clean MRF			
Windrow composting			
Fully automated in-house composting plant			
Landfill rehabilitation	69,500	44,000	79,800
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	569,500	649,900	739,800

Total Operating Costs for Local SWM Components	**7,913,500**	**9,295,800**	**10,849,400**

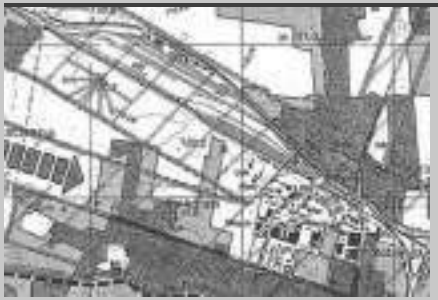
Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Tiranë-Durrës: Specific Costs and Household Tariffs



Assumptions for tariff calculation (without consideration of operational subsidies):

- SWM costs financed:
  80% by households & 20% by commercial entities
- Fee payment from all households
- Costs for the investment of regional measures and dumpsite rehabilitation are covered from other sources



Thank you very much!

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9.3.5 Annex 3.5: Minutes of Waste Zone Meeting Shkoder-Lezhe

Meeting Notes

Project:	Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management in Albania
Theme/objective:	Waste Zone meeting Shkodër-Lezhë local stakeholders
Location:	Colosseo Hotel meeting room, Shkodër
Date:	Friday, 6th July 2018
Time:	See Agenda (Annex 1)
Participants:	See participants list (Annex 2)
Distribution list:	Ministry of Infrastructure and Energy (MoIE) Ministry of Tourism and Environment (MoTE) KfW Development Bank Consultant
Author:	Consultant
Annexes:	1. Agenda 2. Participants List 3. Presentation

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Partner
Dipl.-Ing. Gernod Dilewski
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1 Welcome Notes

The meeting started with opening remarks from the Prefect of Shkodër and Isa Memia (MoIE). Participants were self-introduced (the list of participants and contact details are enclosed as Annex 2 to the Meeting Notes).

Gernod Dilewski (IU) welcomed all participants on behalf of the Consultant.

2 Presentation of the Draft ISWM Master Plan

The Consultant presented the following four topics, related to the overall development of the Master Plan and focusing in depth on the particularities of the Shkodër-Lezhë Waste Zone:

1. Background of the ISWM Master Plan
2. Planning Criteria for the preparation of the Investment Plan
3. Proposed Waste Zones
4. Consolidated Investment Measures for Shkodër-Lezhë Waste Zone

Further details are provided in the presentation attached in Annex 3. Throughout the presentation, the participants were invited to provide comments and feedback.

3 Discussion of ISWM Master Plan and Consolidated Investment Measures for Shkodër-Lezhë Waste Zone

Isa Memia, MoIE

- Presentation of the draft master plan to municipalities is a key element of the drafting process, since the municipalities are the key actors

Gernod Dilewski

- Presentation on *Sector Study on Investment Demand for Integrated Waste Management,* and *Consolidated Investment Measures for Shkodër-Lezhë Waste Zone* (Annex 3)
- Discussion should focus on regional activities and the proposed waste area: do we agree on this waste zone – all municipalities in Shkodër and Lezhë use this regional facility; do we continue to deliver to Bushat and continue to improve the Bushat Waste Management Centre?
- As a follow up of the investment plan more detailed studies have to be conducted to give more detailed solutions
- Lacking most of the municipalities today present, but all municipalities can deliver comments to the Ministry for consideration until July 15th

Isa Memia, MoIE

- Concerned about the interest and participation of the municipalities, since municipality is the main responsible actor, but we still expect the municipal comments
- Shkodër region has one of the first investments of the government in the country, it was our first practice and with little experience and legal framework
- Still do not have a management model defined, but several models in the country
- Welcome any suggestions from municipalities regarding the set up for managing
- Cooperation is necessary to use the economy of scale
- Also criteria from the EU to have as few disposal facilities as possible

Shkodër Municipality

- 1st phase investment for Bushat good for us, but the only problem raised is management
- Using Bushat as regional facility is a positive proposal – but we need to improve the service, the management, the conditions in the landfill and fee setting procedures
- Shkodër desired to be part of the enterprise managing Bushat and part of the board since we are the main waste producer
- Prepared to cooperate, and valuable solution is given through the Master Plan, since also a big part of the investment will be done centrally

Lezhë Regional Council

- Which structure do you think should be responsible for managing the regional facilities, e.g., prefecture, regional council?

Gernod Dilewski

- Master Plan does not provide answers in this case
- From experience, KfW has budget for Master Plan investment projects but would not release until operational agreement for facility management has been defined, currently up to the municipalities
- Law on local self-government gives clear responsibilities and alternatives

Lezhë Regional Council

- 5 transfer stations are envisaged; would be easier if all the municipalities have their own transfer station?

Gernod Dilewski

- A further study will further detail the logistics and the TS
- TS are also a cost, and if 2 municipalities have little waste they can share a transfer station
- Master Plan messages that if you have a regional investment, you have to think and study the logistics how the waste will get into the regional facility especially for the small municipalities

Isa Memia, MoIE

- Central government has been careful not to interfere in these competencies
- Government was also looking into how it can be involved in the waste management scheme
- The idea to set up an entity regarding tariff setting has not found much support
- Management of landfill is an important issue since further technologies will be introduced and it is a challenge regarding specialisation and management
- Reports on negotiations with EU was also mentioned as a key issue to be resolved

- Central government is doing utmost to cover the regional activity financing

Director of Services Shkodër

- KfW support in Shkodër has gained good trust and experience in the long term
- Shkodër approved the 5 year plan for waste management in cooperation with dldp and drafted the ToRs for the new tender foreseeing 100% coverage with services
- Starting with the green waste in the administrative units
- Investments should be focused in Bushat landfill and rehabilitation of Shkodër old landfill in Kir river
- Bushat landfill management has problems regarding price and management
- Landfill fees raised without prior notice therefore not budgeted, and without reasoning

Vau i Dejes Municipality

- Master Plan presented is synchronised with the reality
- Political issues interfere with landfill management
- Bushat landfill is not operating according to standards, but without financing the service cannot be managed
- Many years Bushat commune has paid the salaries of the enterprise

Prefect of Shkodër

- Need for external referee, an entity to define the gate fee
- Shkodër municipality had the problem that the budget was approved in the end of the year and increase of tariffs in the middle of the year creates problems
- Prefecture negotiated between Shkodër municipality and Landfill management

Gernod Dilewski

- There are budgets allocated for dumpsite rehabilitation in the investment plan, it is a considerable amount and we are talking with the ministry in allocating as a regional activity
- Tariff decision is not something that can be solved with the investment plan, but the plan is a good starting point to have a further support project, but in such project preparation all municipalities have to take a role
- Discussion outlines that organisational and financial aspect are the key issues to be resolved
- Landfill costing has so many aspects coming into the calculation, and it is difficult to ask for one fixed tariff; e.g., leachate treatment is a costly activity and involves economy of scale. If calculation is done for 150 tons per day and only 50 tons are delivered unit costs might go up several times

Isa Memia, MoIE

- Some further municipalities are included in the Shkodër -Lezhë waste zone
- The regional scheme has to be made known to al municipalities and a new agreement between all municipalities is needed
- The detailed study for organising the long-distance transport needs to be carried out

Alba Dakoli Wilson

- Are there any comments or changes that should be reflected from this meeting in the current Shkodër-Lezhë Waste Zone Consolidated Investment Measures?
- As requested the Master Plan draft was distributed to the municipalities by MoIE, will be re-sent to all participants signed with emails in the participant list
- Further time available for comments is until the 15th of July
- In discussion with the MoIE comments will be reflected in the final draft of Master Plan

All participants

- At this stage, we agree with the proposal as it is
- Further comments, if applicable, will be provided in writing during the timeframe available for comments

4 Closing of the meeting

The Prefect of Shkodër had closing words at the end of the meeting, thanking the participants for the input and discussion and the consultant for the presentation and explanations.

INFRASTRUKTUR & UMWELT
6th July 2018

Gernod Dilewski (Consultant, Team Leader)

Annex 1: Agenda

INFRASTRUKTUR & UMWELT
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Integrated Solid Waste Management (ISWM) in Albania
Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management

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Public Consultation on the Waste Master Plan and "Strategic Environmental Assessment" pursuant to the Law no. 146/2014, "On Notification and Public Consultation"

Friday, 06 July 2018 (10:00 – 13:30 hours)

Address: Colosseo Hotel, Rruga "Kol Idromeno", Shkodër, Albania

www.colosseohotel.com

Background:

KfW has commissioned INFRASTRUKTUR & UMWELT, COWI and FLAG with the implementation of consulting services for the above mentioned project. The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

The specific objectives of the Sector Study are

- to determine the proper methodology and technology for future investments in the SWM sector
- to determine the proper costs and tariffs
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments

- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/or disposal facilities
- to propose the necessary legal and institutional changes
- to propose any other accompanying measures

The workshop is intended to present and discuss

- the consolidated investment measures in each waste zone
- overall costs of “regional” and “local” investments
- operational costs of “regional” and “local” activities, as well as relevant household tariffs

AGENDA

9:45	Registration
10:00	**Welcome note** Ministry of Infrastructure and Energy
10:15	**Welcome note and introduction to the Workshop Objectives** Consultant
10:30	**Self-introduction of Participants**
10:45	**Presentation of the Sector Study for Investment Demand in ISWM (Waste Master Plan)** Consultant
11:30	**Consolidated Investment Measures for Waste Zones** Consultant
12:00	***- Coffee break -***
12:30	**Discussion**
13:20	**Closure of the Meeting** Ministry of Infrastructure and Energy
13:30	***- Working lunch -***

Annex 2: Participants List

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner
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Integrated Solid Waste Management (ISWM) in Albania
Public Consultation on the Waste Master Plan and the Strategic Environmental Assessment

Friday, 6 July 2018 (10:00-13:30)
Address: Hotel Colosseo, Shkoder

No.	Emri/ Name	Mbiemri/ Surname	Pozicioni/ Position	Institucioni/ Institution	Email	Telefon	Konfirmim [illegible]
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4	[illegible]	Molla	[illegible]	Shkoder	[illegible]	0684040938	Ok
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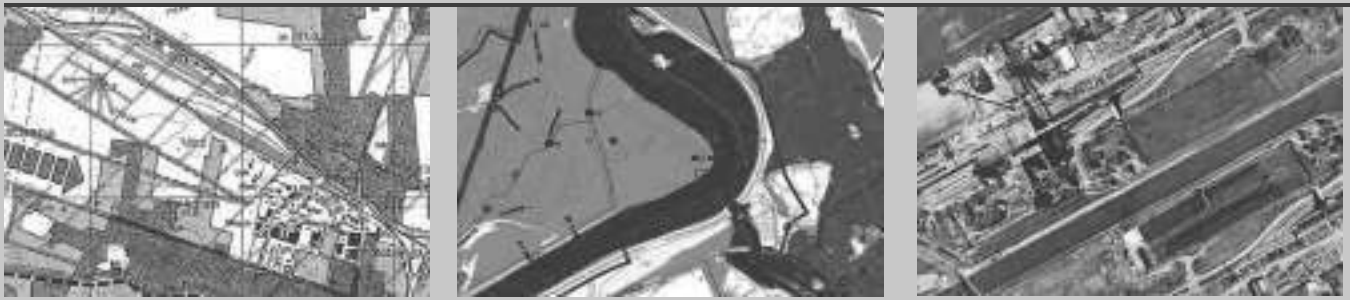
8	AIDA	SALLAKU	DREJTOR [illegible]	Bashkia Shkoder	[illegible]@gmail.com	0673772756	+
9	ALFRED	LULETA	Drejtor [illegible] Publike	Bashkia Shkoder	luletaalfred@yahoo.[illegible]	0673811653	+

Annex 3: Presentation

THINK CREATIVELY | PLAN FLEXIBLY | IMPLEMENT RELIABLY



Integrated Solid Waste Management in Albania -
Sector Study for Investment Demand (ISWM Masterplan)

Consultation Meeting with Local Stakeholders
Waste Zone Shkodër-Lezhë

Shkodër, 6 July 2018

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner

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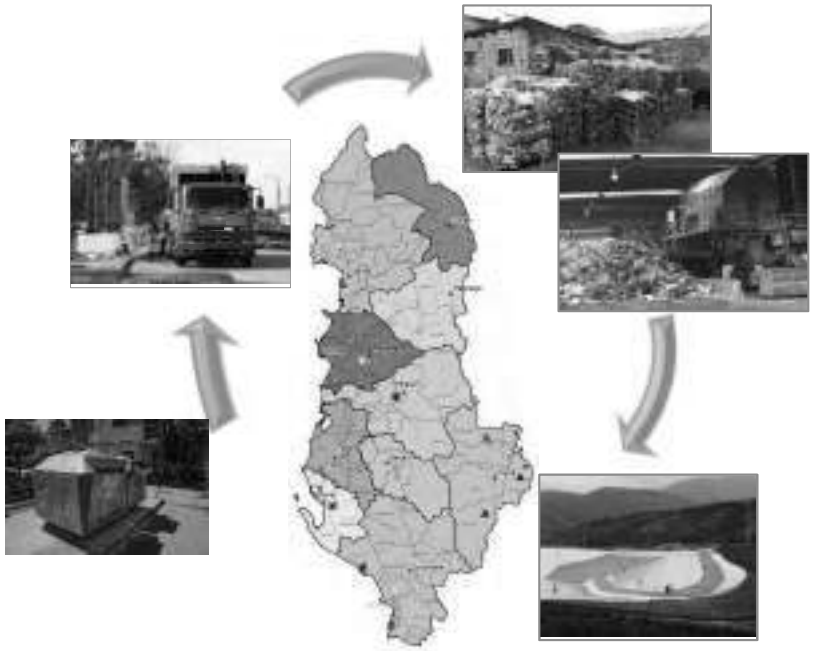
Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Shkodër-Lezhë



Background of the ISWM Masterplan

The Sector Study for Investment Demand for Integrated Waste Management in Albania is

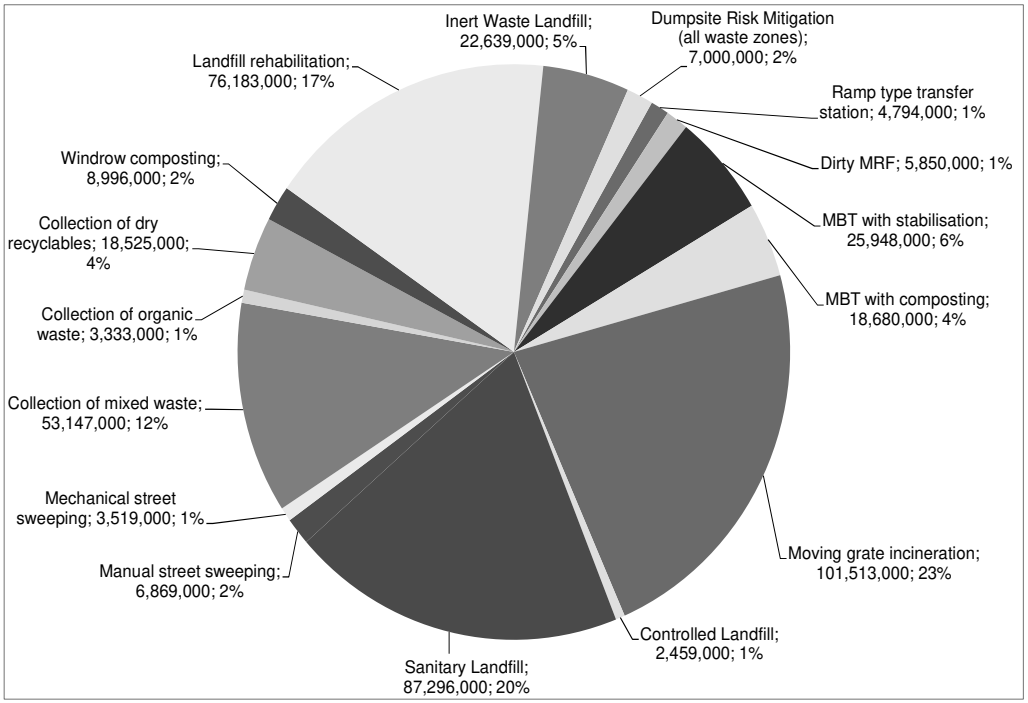
- prepared by the Ministry of Infrastructure and Energy (MoIE)

- financed by the German Development Bank KfW

KFW

Background of the ISWM Masterplan

- Main objectives:
  - to determine the proper methodology and technology for future investments in the SWM sector
  - to determine the proper costs and tariffs
  - to provide a phased investment plan for local and regional ISWM infrastructure
  - to propose necessary legal and institutional changes



Background of the ISWM Masterplan

- All regions have been visited at the start of the project in the first half of 2017, to discuss
  - the current situation of waste management services
  - main challenges
  - ongoing plans and initiatives

- An inter-ministerial working group has been established with representatives from MoIE and MoTE for the preparation of the ISWM Masterplan

- The Draft ISWM Masterplan will now be discussed with stakeholders before preparation of the final version of the Masterplan

Background of the ISWM Masterplan

The main purpose of the today's meeting is to give the municipalities the opportunity to comment on the

- proposed **waste zones** and
- foreseen **investment measures for regional investment**

in order to consider the opinion of the municipalities in the preparation of the final **ISWM Masterplan**

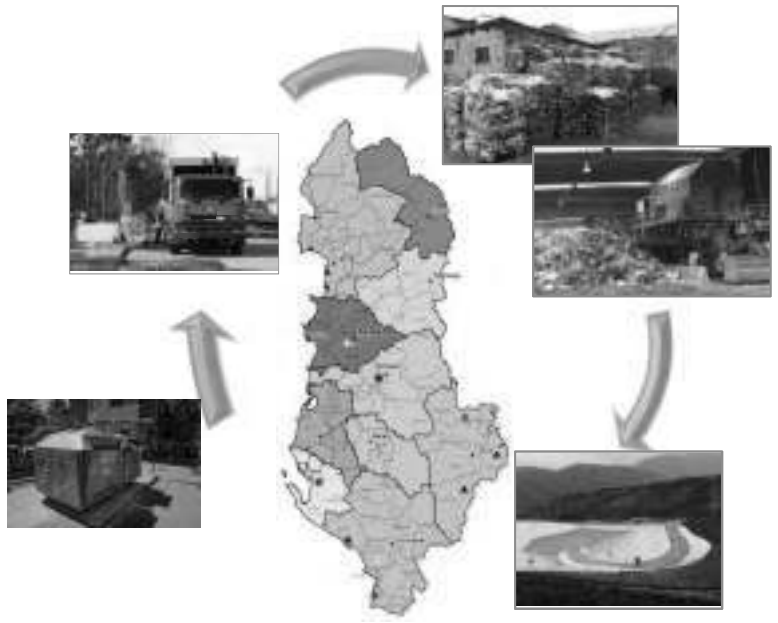
Content of the Presentation

1. Background of the ISWM Masterplan

2. Planning Criteria
   - Key Areas for Improved Waste Management
   - Economy of Scale
   - Regional and Local Waste Management Activities

3. Proposed Waste Zones

4. Waste Zone Shkodër-Lezhë

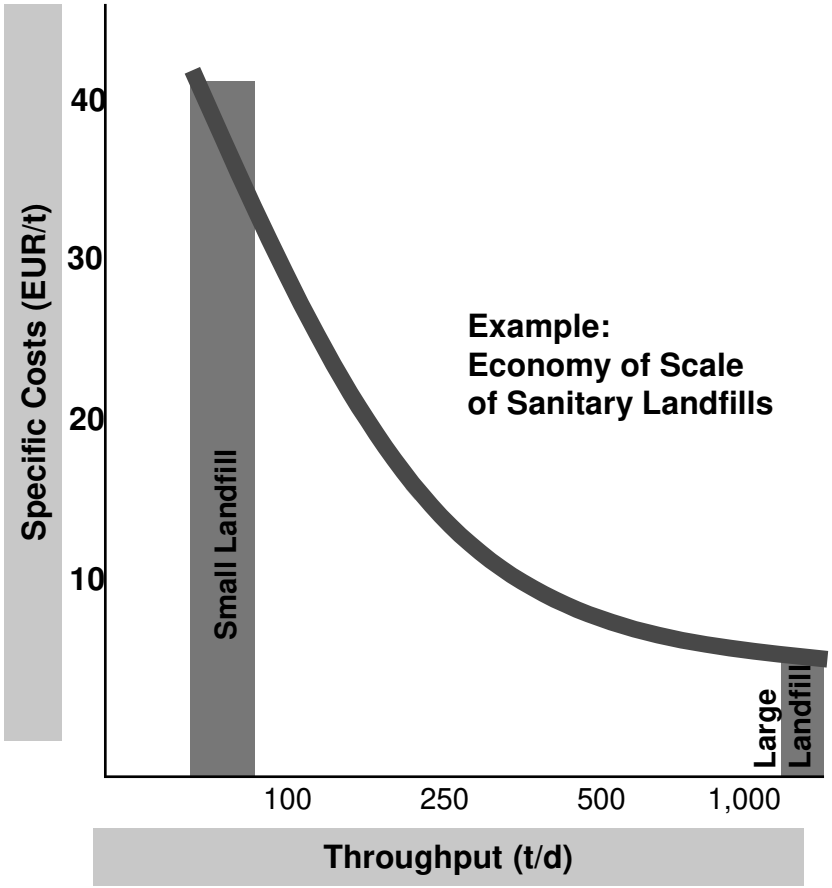


Key Areas for Improved Waste Management

- Besides improvement of **waste collection** and **disposal**, Albania as an EU candidate country is obliged to comply with **EU standards for SWM**.
- These have been transferred into Albanian legislation and focus on **waste recovery** and **treatment**
  - Recovery and recycling of 50% of the waste stream (WM Strategy)
  - Treatment of organic waste before disposal (EU landfill directive)

Economy of Scale

- Total specific costs of waste facilities decrease with increasing throughput
- Minimum throughput for an economic operation
  (e.g. 100 t/d for sanitary landfills)



„Regional“ Waste Management Activities

The following components are considered as “regional”:

– Transfer and Transport

– Treatment of Residual Waste (including Mechanical Biological Treatment and Incineration)

– Sanitary Landfills

„Local“ Waste Management Activities

The following components are considered as “local”:

- Street sweeping and waste collection

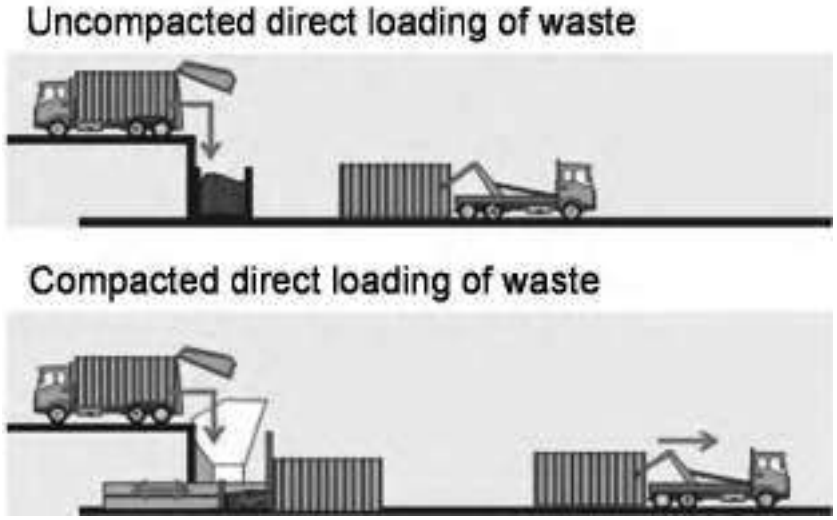
- Separate collection and processing of recyclables and organic waste

- Landfills for construction waste (inert waste)

- Rehabilitation of dumpsites

Waste Transfer: Transfer Station

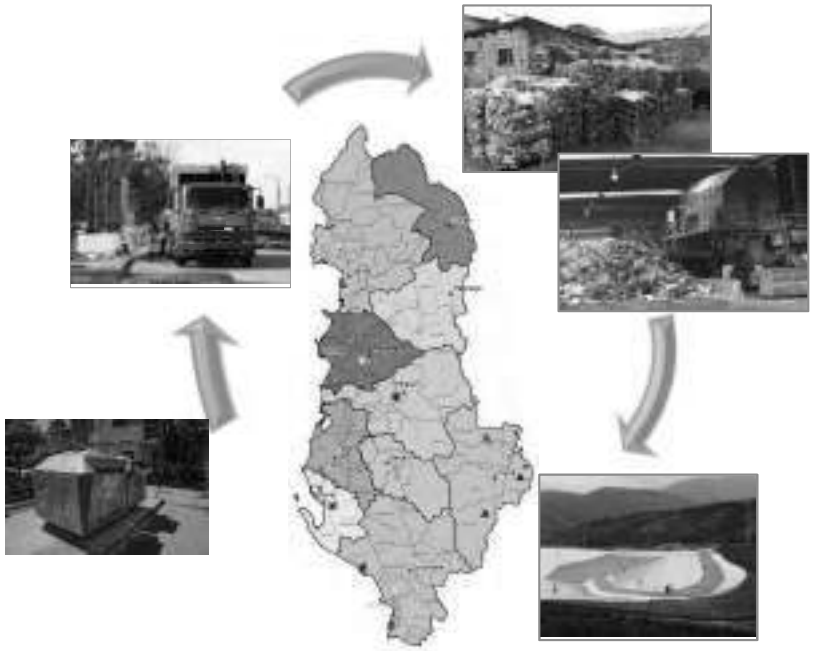
- Purpose of waste transfer for long distance transport:
  - Better utilisation of collection vehicles
  - Connection of small settlements
  - Less operating and maintenance costs
  - Less traffic / less emissions



- Implementation of transfer stations is recommendable for locations with > 30 km transport distance

Content of the Presentation

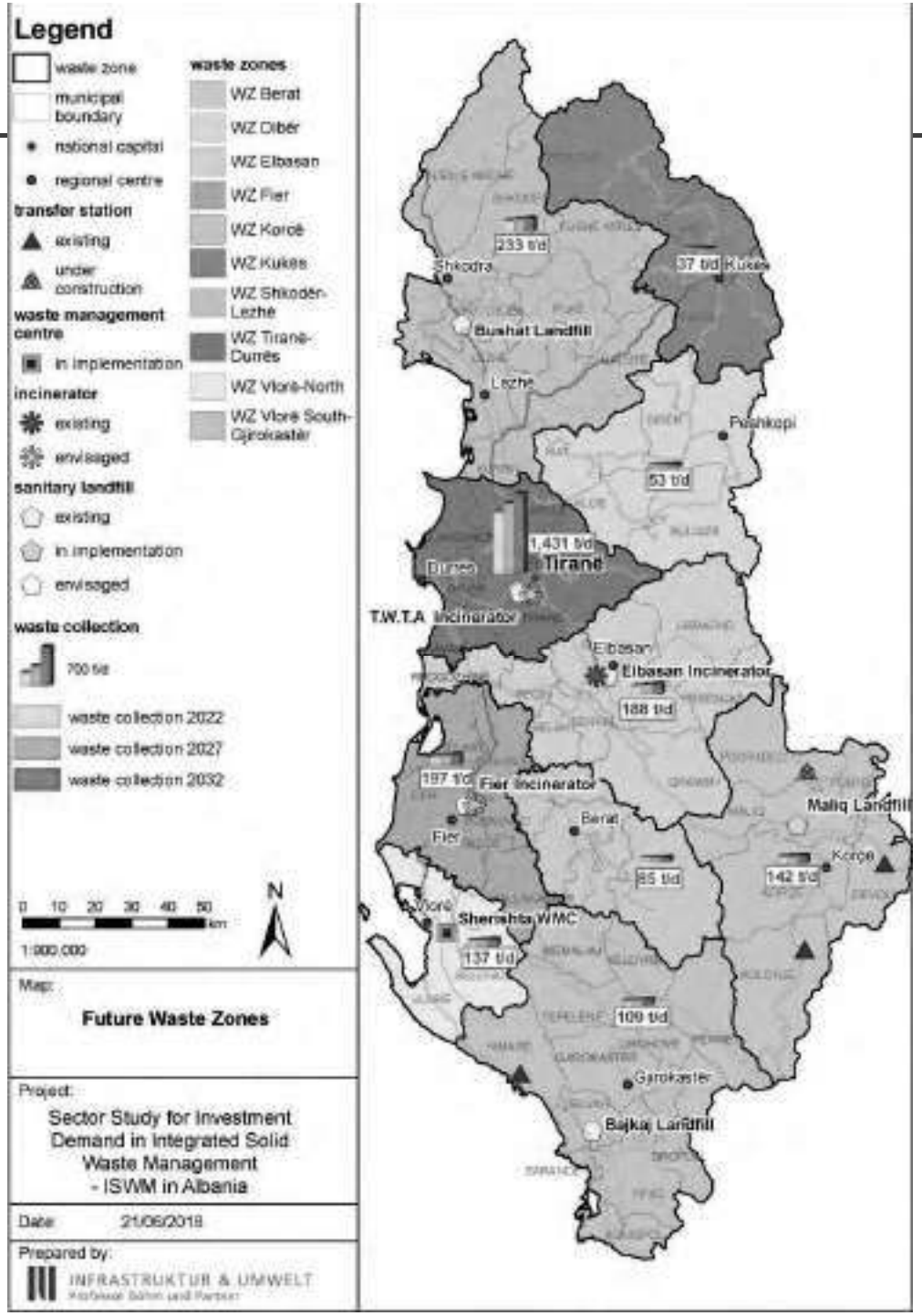
1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Shkodër-Lezhë



Proposed Waste Zones

Criteria for demarcation of waste zones:

- Spatial structure
- Accessibility
- Population size and development
- Waste amount



Proposed Waste Zone Shkodër-Lezhë

*TS: Transfer Station
for a transport distance > 30 km

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Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Shkodër-Lezhë
   - Regional Investment Measures
   - Investment and Annual Operating Costs for Regional Facilities
   - Investment and Annual Operating Costs for Local Facilities
   - Specific Costs and Household Tariffs

Waste Zone Shkodër-Lezhë

Municipality	Waste Amount (Collected Waste)		
	2022	2027	2032
Kurbin	29 t/d	31 t/d	34 t/d
Lezhë	34 t/d	39 t/d	42 t/d
Mirditë	10 t/d	11 t/d	12 t/d
Fushë-Arrës	3 t/d	3 t/d	3 t/d
Malësi e Madhe	11 t/d	13 t/d	14 t/d
Pukë	4 t/d	5 t/d	5 t/d
Shkodër	99 t/d	105 t/d	111 t/d
Vau i Dejës	9 t/d	11 t/d	13 t/d
TOTAL	**198 t/d**	**218 t/d**	**233 t/d**

WZ Shkodër-Lezhë: Regional Investment Measures

- Existing and planned regional waste facilities for Waste Zone Shkodër-Lezhë

Waste Zone:	WZ Shkodër-Lezhë			LOAD Default Data	LOAD Saved Data	Delete Saved Data	Save Input
Key Specifications			**Phase 1**	**Phase 2**	**Phase 3**		
Population			392,364	382,640	373,931		
Collected Municipal Waste Quantity [t/a]			72,342	79,399	85,116		
Amount of recycables [t/a]			24,596	26,996	28,939		
Amount of organic waste [t/a]			36,171	39,699	42,558		
Share of Urban Waste			81%	79%	77%		
Inert Waste Quantity [t/a]			76,873	74,982	73,291		
Regional Facilities	**Priority**	**Status**	**Phase 1**	**Phase 2**	**Phase 3**	**Known Costs [EUR]**	
Long Distance Transport							
Ramp type transfer station		In planning stage	4	Existing	Existing		
Waste Treatment							
MBT with stabilisation				1	Existing		
Waste Disposal							
Sanitary Landfill		Existing	Extension	Extension	Extension	3,854,000	

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Shkodër-Lezhë: Investment Costs for Regional Facilities

Investment costs for regional facilities	WZ Shkodër-Lezhë	Currency
		EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	800,000		
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation		14,848,000	
MBT with composting			
Anaerobic Digestion (AD)			
Moving grate incineration			
Waste Disposal			
Controlled Landfill			
Sanitary Landfill	3,467,000	5,479,000	5,873,000

Total Investment Costs for Regional Facilities	**4,267,000**	**20,327,000**	**5,873,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Shkodër-Lezhë: Annual Operating Costs for Regional Facilities

Annual operating costs for regional facilities	WZ Shkodër-Lezhë	Currency
		EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	121,000	108,000	101,000
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation		2,202,000	2,046,000
MBT with composting			
Anaerobic Digestion (AD)			
Moving grate incineration			
Waste Disposal			
Controlled Landfill			
Sanitary Landfill	461,000	170,000	167,000

Total Operating Costs for Regional Facilities	**582,000**	**2,480,000**	**2,314,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Shkodër-Lezhë: Investment Costs for Local Facilities

Investment costs for local SWM components	WZ Shkodër-Lezhë	Currency EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	196,000	213,000	226,000
Mechanical street sweeping	36,000	72,000	96,000
Waste Collection			
Collection of mixed waste	1,586,000	1,508,000	1,330,000
Collection of organic waste	25,000	463,000	441,000
Collection of dry recyclables	466,000	755,000	1,112,000
Local Facilities			
Clean MRF			
Windrow composting	92,000	1,623,000	739,000
Fully automated in-house composting plant			
Landfill rehabilitation			3,645,000
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	1,247,000	580,000	623,000

Total Investment Costs for Local SWM Components	**3,648,000**	**5,214,000**	**8,212,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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WZ Shkodër-Lezhë: Annual Operating Costs for Local Facilities

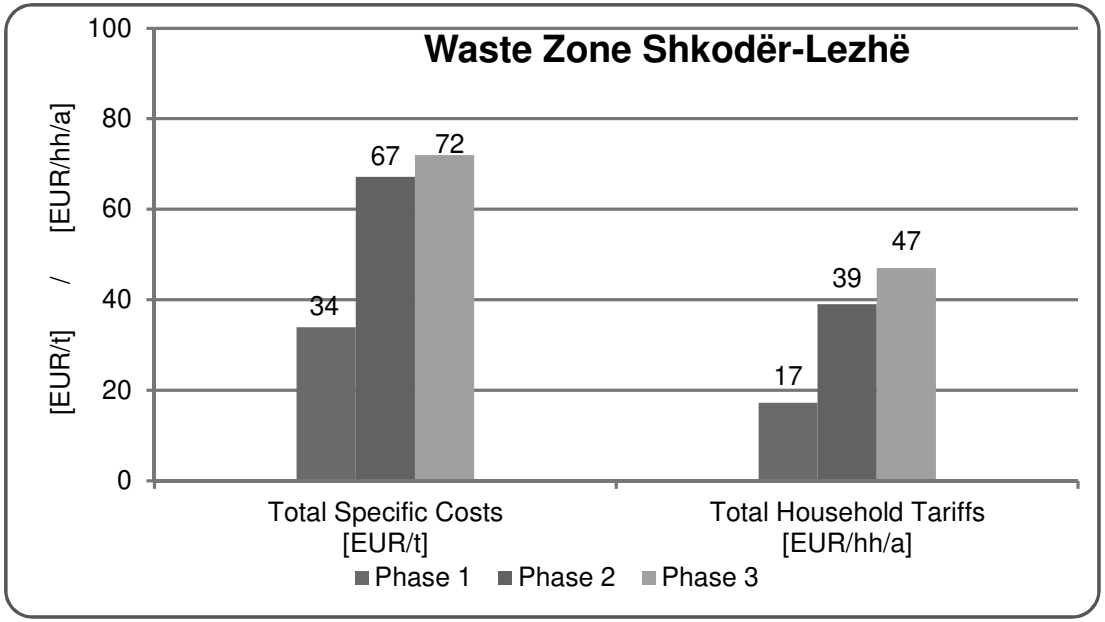
Annual operating costs for local SWM components	WZ Shkodër-Lezhë	Currency EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	482,500	545,600	590,800
Mechanical street sweeping	33,000	52,600	73,800
Waste Collection			
Collection of mixed waste	752,500	663,500	618,000
Collection of organic waste	9,100	174,600	249,400
Collection of dry recyclables	58,000	123,100	199,800
Local Facilities			
Clean MRF			
Windrow composting	4,000	73,700	105,300
Fully automated in-house composting plant			
Landfill rehabilitation			19,400
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	72,100	105,200	140,800

Total Operating Costs for Local SWM Components	**1,411,200**	**1,738,300**	**1,997,300**

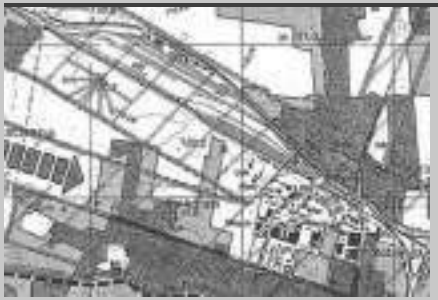
Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Shkodër-Lezhë:
Specific Costs and Household Tariffs



Assumptions for tariff calculation:

- SWM costs financed:
  80% by households & 20% by commercial entities
- Fee payment from all households
- Costs for the investment of regional measures and dumpsite rehabilitation are covered from other sources



Thank you very much!

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9.3.6 Annex 3.6: Minutes of Waste Zone Meeting Elbasan

Meeting Notes

Project:	Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management in Albania
Theme/objective:	Waste Zone meeting Elbasan local stakeholders
Location:	Scampini Hotel meeting room, Elbasan
Date:	Tuesday, 10th July 2018
Time:	See Agenda (Annex 1)
Participants:	See participants list (Annex 2)
Distribution list:	Ministry of Infrastructure and Energy (MoIE) Ministry of Tourism and Environment (MoTE) KfW Development Bank Consultant
Author:	Consultant
Annexes:	1. Agenda 2. Participants List 3. Presentation

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Partner
Dipl.-Ing. Gernod Dilewski
Dipl.-Ing. Hans-Jürgen Gräff
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1 Welcome Notes

The meeting started with opening remarks from Isa Memia (MoIE). Participants were self-introduced (the list of participants and contact details are enclosed as Annex 2 to the Meeting Notes).

Gernod Dilewski (IU) welcomed all participants on behalf of the Consultant.

2 Presentation of the Draft ISWM Master Plan

The Consultant presented the following four topics, related to the overall development of the Master Plan and focusing in depth on the particularities of Elbasan Waste Zone:

1. Background of the ISWM Master Plan
2. Planning Criteria for the preparation of the Investment Plan
3. Proposed Waste Zones
4. Consolidated Investment Measures for Elbasan Waste Zone

Further details are provided in the presentation attached in Annex 3. Throughout the presentation, the participants were invited to provide comments and feedback.

3 Discussion of ISWM Master Plan and Consolidated Investment Measures for Elbasan Waste Zone

Gernod Dilewski

- Presentation on Sector Study on *Investment Demand for Integrated Waste Management, and Consolidated Investment Measures for Elbasan Waste Zone* (Annex 3)
- The right time for presenting your comments, proposals can be incorporated into the final version of the Master Plan, which is expected to be annually updated
- Facility already installed in Elbasan was given as a starting point

Key questions:

- Is the idea of the waste zone supported by all the municipalities?
- System of the transfer station planned, is this an implementable solution in the next step?

Librazhd Mayor

- Expresses concern about the representation level of the ministry in this meeting
- Since the minister invites the mayors, a deputy minister should be present
- Librazhd municipality collects 10mln ALL from fees and pays 20mln for the service and sends to the incinerator
- If payment of 35 euro per ton is requested, it is not possible to bring the waste to the incinerator
- Representation should be political level and then government should give solution

- 44 000 inhabitants and cleaning offered only for less than 50% since half is in the mountains and do not pay the service and we cannot offer the service
- Government should define the approach for dealing with waste management

Isa Memia, MoIE

- Apologies for the inability of the deputy minister to join, for reasons beyond his control
- Your concerns will be reported accordingly
- We are aware for the municipal difficulties therefore government is taking measures for covering regional activities
- The process of EU integration has set criteria for achieving requested standards
- Small municipalities have to find solutions, therefore transport with the transfer stations is planned, but this should be a regional cost shared by the participating municipalities
- Long distance transport scheme should be resolved through further study
- By Local Government law municipalities are responsible for all the waste management functions
- Ministry has taken over the regional facility financing in Elbasan and until 2024 the operation costs are zero for the municipalities in the waste zone
- Government is taking all the measure for setting up the waste management infrastructure, but municipalities should be more active regarding the waste and tariff setting and collection
- Costs are calculated based on the 'polluter pays' principle
- Central Government collects very little revenues from environmental activities

Gernod Dilewski

- Future operation of the incinerator is to be taken into account and to be resolved and it is not possible to do it within the investment plan
- Further operation of regional facility and financing means is a political level decision
- Solutions provided in the Master Plan respect standards that are set up, our proposals have strict guidelines regarding the standards
- The new national waste management strategy currently being discussed and is looking into possibilities for reducing the financial burden for municipalities
- In parallel there is a discussion for generating additional financing with the industry getting the responsibility of packaging waste collection which, if successful, will cover the budget line for recycling included in the investment plan

Gramsh Mayor

- 45km far from Elbasan with one point of collection for urban waste and some villages close to the urban area
- 60% of the territory is not covered with service due to infrastructure
- We do not have the possibilities of transport and do our best to collect cleaning tariff
- Some administrative centres are 45 km away from the centre of the municipality

Isa Memia, MoIE

- In cooperation with the Ministry of Environment it is being considered that for a temporary period maybe old dumpsites will remain functional with some immediate measures; the ministry is still working for acquiring the budget
- Ministry is aware about the municipal concerns for the long distance transport

Elbasan Regional Council

- Master Plan presented is a good plan for resolving some issues for small municipalities
- Municipalities should have a clearer picture about covering regional facility costs

- Looking into the municipal budget and the fee citizens pay it should be clarified what to expect in the other phases that follow up
- A very clear policy should be laid out on what will happen after the first phase in Elbasan, if municipalities are not capable to manage it properly
- Question for the consultant about real costs of the incineration
- Elbasan municipality might not be able to pay for subsidizing the distant municipalities
- A sustainable solution need to be observed by the government for regional activities
- Study should be going a bit further touching upon awareness campaign

Gernod Dilewski

- Municipalities should expect that in the future the treatment will have costs
- Master Plan started with constructed incinerator in Elbasan, with instruction that all the existing facilities and agreed projects would be taken into the investment plan as they are
- We have no information on the Elbasan facility specific costs
- Incineration is quite common in many other countries but usually not for free

Isa Memia, MoIE

- A further study has to be elaborated defining the gate fee level but also the locations of the transfer stations
- Municipalities will take over the operation of the regional facility
- Awareness raising is already dealt with by the ministry of environment

Elbasan Regional Council

- A technical discussion regarding the emissions of the incinerator is needed
- Is the technology employed in Elbasan from our times or an old technology?

Gernod Dilewski

- EU directive on waste incineration – defining operation and emission standards
- According to the contract the EU standards are taken as the reference point for the incinerator
- Emission of the incinerator is very much related with the cost of the operation

Cërrik Municipality

- Very few areas are not covered by waste service
- Old dumpsites are to be rehabilitated
- Cost per treatment of waste will be charged to the producer

Prrenjas Municipality

- 75 km distance from the regional facility
- Only transporting costs 40 mln ALL, which is concern for the municipality

Elbasan Regional Council

- Why is Rrogozhina included in Elbasan waste zone?

Isa Memia, MoIE

- Durres region will join the Waste zone with the Tirana incinerator, therefore for Rrogozhina it is more feasible to transport to Elbasan
- Issues that follow up Master Plan are: how will the incinerator operate after finalising the concessionary arrangements, and how will the system of transfer stations become functional

Alba Dakoli Wilson

- Are there any comments or changes that should be reflected from this meeting in the current Elbasan Waste Zone Consolidated Investment Measures?
- Further time available for comments is until the 15th of July
- In discussion with the MoIE comments will be reflected in the final draft of Master Plan

All participants

- At this stage, there are no comments for the proposal as it is
- Further comments, if applicable, will be provided in writing during the timeframe available for comments

4 Closing of the meeting

The representative of the MoIE had closing words at the end of the meeting, thanking the participants for the input and discussion and the consultant for the presentation and explanations.

INFRASTRUKTUR & UMWELT
10th July 2018

Gernod Dilewski (Consultant, Team Leader)

Annex 1: Agenda

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner

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Integrated Solid Waste Management (ISWM) in Albania
Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management

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Public Consultation on the Waste Master Plan and "Strategic Environmental Assessment" pursuant to the Law no. 146/2014, "On Notification and Public Consultation"

Tuesday, 10 July 2018 (10:00 – 13:30 hours)

Address: Hotel Scampini, Elbasan, Albania

www.scampinihotel.al

Background:

KfW has commissioned INFRASTRUKTUR & UMWELT, COWI and FLAG with the implementation of consulting services for the above mentioned project. The Sector Study is guided by the National SWM Sector objectives, namely on the provision of reliable SWM services to the whole country, the reduction and recycling of waste fractions, the reduction of the number of uncontrolled and unsanitary dumpsites as well as the protection of the environment.

The specific objectives of the Sector Study are

- to determine the proper methodology and technology for future investments in the SWM sector
- to determine the proper costs and tariffs
- to provide an objective, verifiable and transparent prioritization system of ISWM infrastructure investments

- to provide a phased investment plan for local and regional ISWM infrastructure for the short, medium and long term, concerning waste collection and transport, reduction and recycling of waste and treatment and/or disposal facilities
- to propose the necessary legal and institutional changes
- to propose any other accompanying measures

The workshop is intended to present and discuss

- the consolidated investment measures in each waste zone
- overall costs of “regional” and “local” investments
- operational costs of “regional” and “local” activities, as well as relevant household tariffs

AGENDA

9:45	Registration
10:00	**Welcome note** Ministry of Infrastructure and Energy
10:15	**Welcome note and introduction to the Workshop Objectives** Consultant
10:30	**Self-introduction of Participants**
10:45	**Presentation of the Sector Study for Investment Demand in ISWM (Waste Master Plan)** Consultant
11:30	**Consolidated Investment Measures for Waste Zones** Consultant
12:00	***- Coffee break -***
12:30	**Discussion**
13:20	**Closure of the Meeting** Ministry of Infrastructure and Energy
13:30	***- Working lunch -***

Annex 2: Participants List

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner
COWI
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Integrated Solid Waste Management (ISWM) in Albania
Public Consultation on the Waste Master Plan and the Strategic Environmental Assessment

Tuesday, 10 July 2018 (10:00-13:30)
Address: Hotel "[illegible]", Elbasan

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10	Deniz	Beshiri	Spec	MIE	Deniz.Beshiri@infrastruktura.gov.al		[illegible]
11	Indrit	[illegible]	Përgjegjës	Inst. Bujqësor [illegible]	indrit.[illegible]@hotmail.com	06923[illegible]	[illegible]
12	Glada	Tolli	Spec. Bujqësi	Inst. Prof. Elbasan	glada_tolli@hotmail.com	0652091283	[illegible]
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Integrated Solid Waste Management (ISWM) in Albania
Public Consultation on the Waste Master Plan and the Strategic Environmental Assessment

Tuesday, 10 July 2018 (10:00-13:30)
Address: Hotel "Scampini", Elbasan

No.	Emri/ Name	Mbiemri/ Surname	Pozicioni/ Position	Institucioni/ Institution	Email	Telefoni/ Phone	Konfirmimi për drekë. Confirmation for lunch
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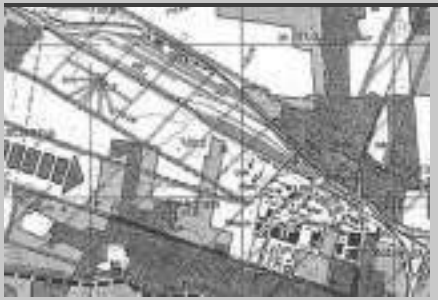
	Alba	Dakoli W'bea	Drejtore	Flag	flag@flag-al.org	042270242	+
	Marinela	Vreto	[illegible]	Bashkia Peqin	[illegible]@gmail.com	068604599	+
	Gordana	[illegible]	[illegible]	Bashkia Prrenjas	[illegible]	0693920983	+
	Marsela	Jorgji	[illegible]	FLAG	marsela.jorgji@flag-al.org		[illegible]
			KRYETARI	BASHKIA LIBRAZHD			

Annex 3: Presentation



Integrated Solid Waste Management in Albania -
Sector Study for Investment Demand (ISWM Masterplan)

Consultation Meeting with Local Stakeholders
Waste Zone Elbasan

Elbasan, 10 July 2018

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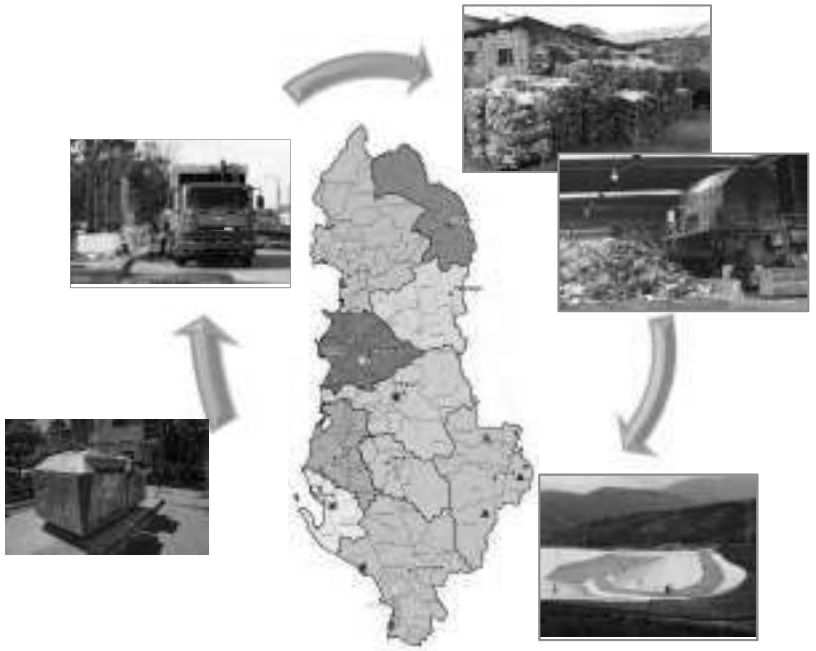
Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Elbasan



Background of the ISWM Masterplan

The Sector Study for Investment Demand for Integrated Waste Management in Albania is

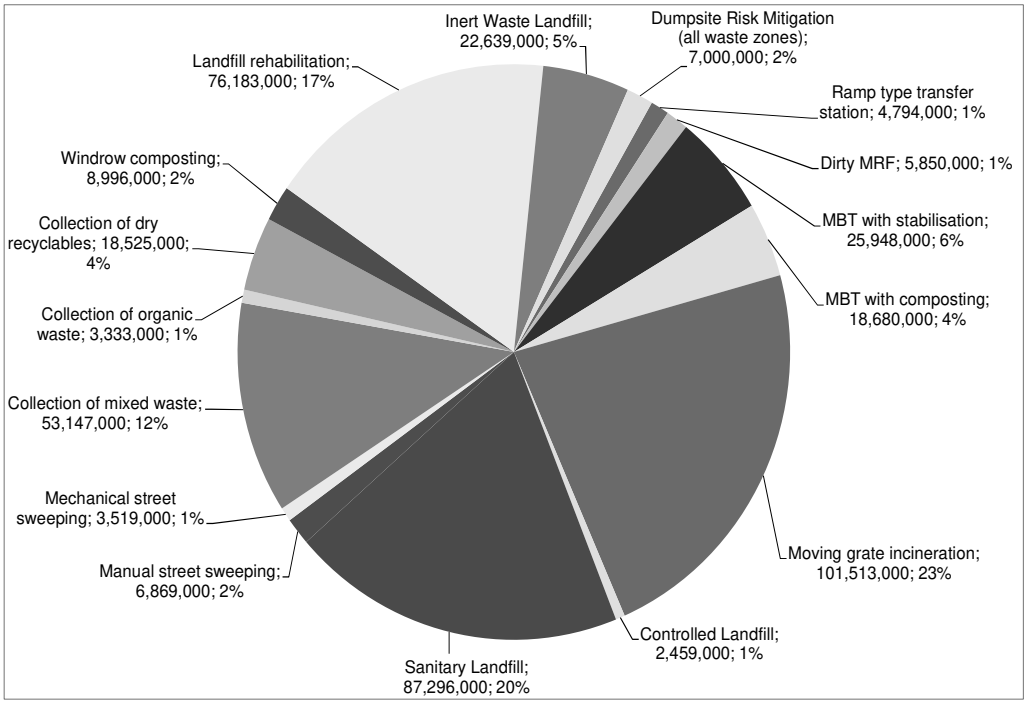
- prepared by the Ministry of Infrastructure and Energy (MoIE)

- financed by the German Development Bank KfW

KFW

Background of the ISWM Masterplan

- Main objectives:
  - to determine the proper methodology and technology for future investments in the SWM sector
  - to determine the proper costs and tariffs
  - to provide a phased investment plan for local and regional ISWM infrastructure
  - to propose necessary legal and institutional changes



Background of the ISWM Masterplan

- All regions have been visited at the start of the project in the first half of 2017, to discuss
  - the current situation of waste management services
  - main challenges
  - ongoing plans and initiatives

- An inter-ministerial working group has been established with representatives from MoIE and MoTE for the preparation of the ISWM Masterplan

- The Draft ISWM Masterplan will now be discussed with stakeholders before preparation of the final version of the Masterplan

Background of the ISWM Masterplan

The main purpose of the today's meeting is to give the municipalities the opportunity to comment on the

- proposed **waste zones** and
- foreseen **investment measures for regional investment**

in order to consider the opinion of the municipalities in the preparation of the final **ISWM Masterplan**

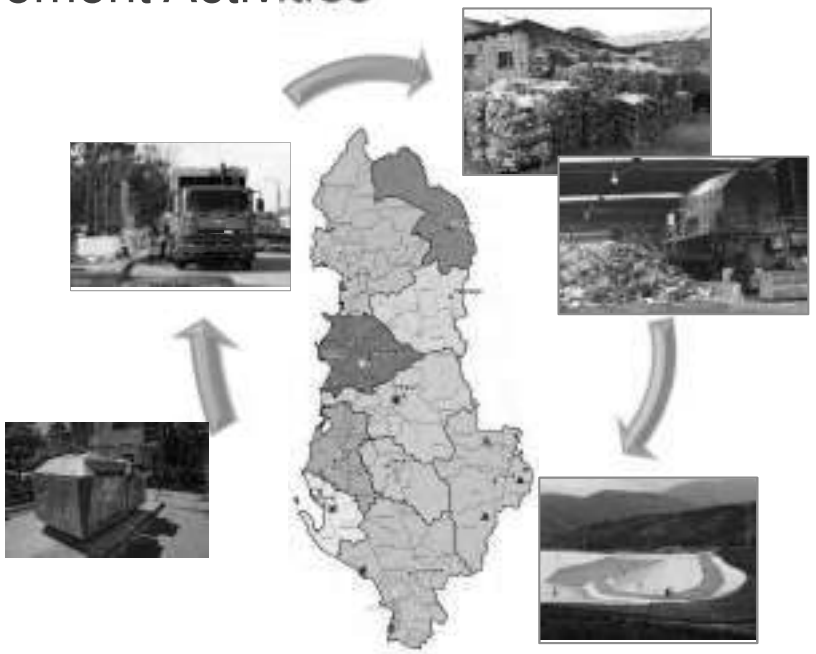
Content of the Presentation

1. Background of the ISWM Masterplan

2. Planning Criteria
   - Key Areas for Improved Waste Management
   - Economy of Scale
   - Regional and Local Waste Management Activities

3. Proposed Waste Zones

4. Waste Zone Elbasan

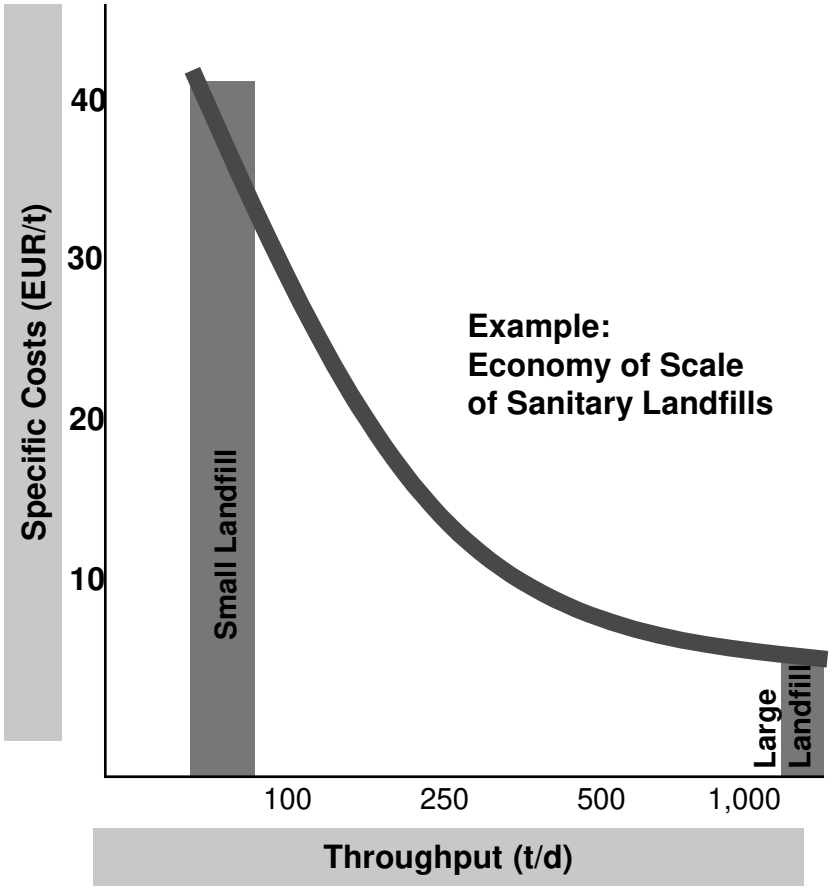


Key Areas for Improved Waste Management

- Besides improvement of **waste collection** and **disposal**, Albania as an EU candidate country is obliged to comply with **EU standards for SWM**.
- These have been transferred into Albanian legislation and focus on **waste recovery** and **treatment**
  - Recovery and recycling of 50% of the waste stream (WM Strategy)
  - Treatment of organic waste before disposal (EU landfill directive)

Economy of Scale

- Total specific costs of waste facilities decrease with increasing throughput
- Minimum throughput for an economic operation
  (e.g. 100 t/d for sanitary landfills)



„Regional“ Waste Management Activities

The following components are considered as “regional”:

– Transfer and Transport

– Treatment of Residual Waste (including Mechanical Biological Treatment and Incineration)

– Sanitary Landfills

„Local“ Waste Management Activities

The following components are considered as “local”:

- Street sweeping and waste collection

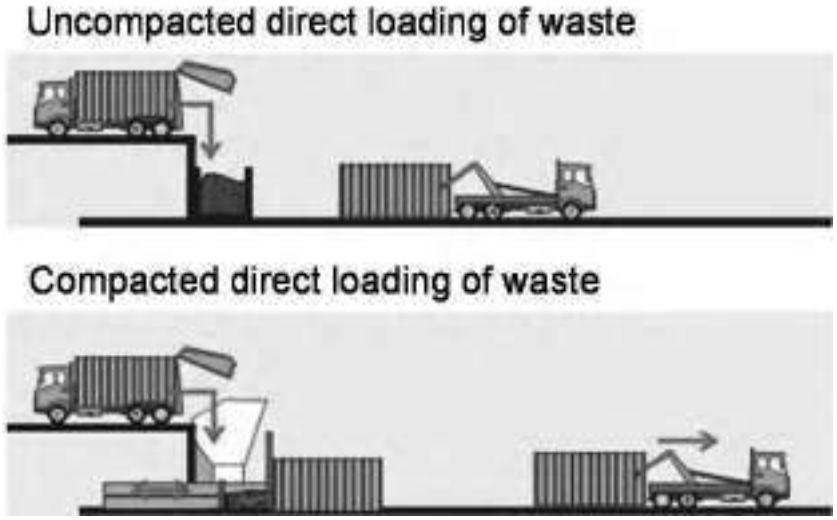
- Separate collection and processing of recyclables and organic waste

- Landfills for construction waste (inert waste)

- Rehabilitation of dumpsites

Waste Transfer: Transfer Station

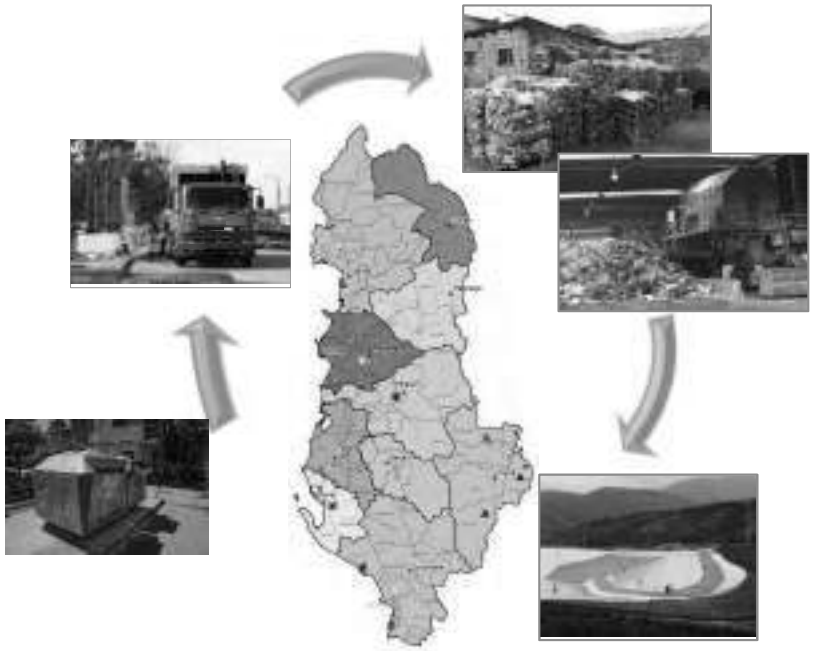
- Purpose of waste transfer for long distance transport:
  - Better utilisation of collection vehicles
  - Connection of small settlements
  - Less operating and maintenance costs
  - Less traffic / less emissions



- Implementation of transfer stations is recommendable for locations with > 30 km transport distance

Content of the Presentation

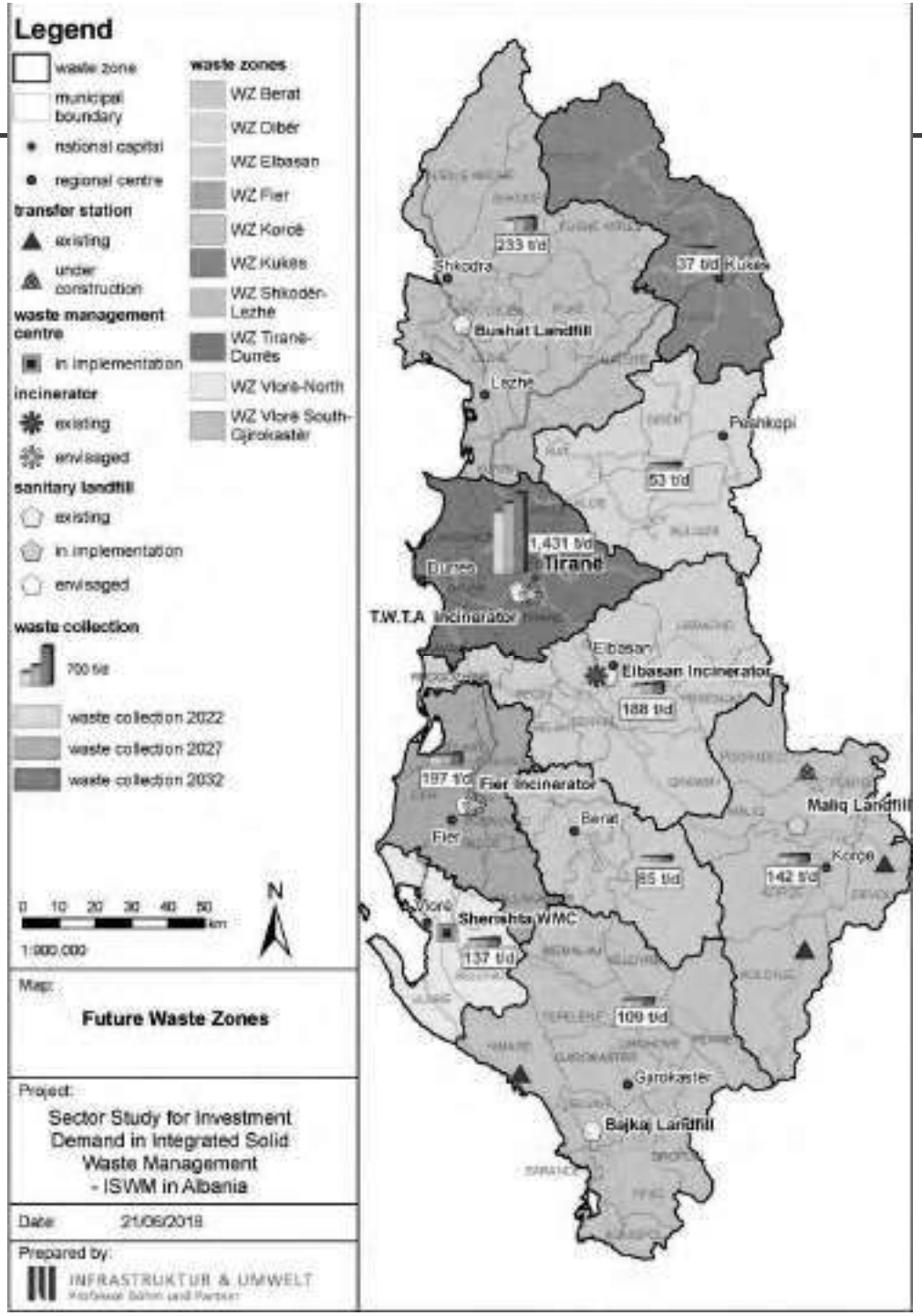
1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Elbasan



Proposed Waste Zones

Criteria for demarcation of waste zones:

- Spatial structure
- Accessibility
- Population size and development
- Waste amounts



Proposed Waste Zone Elbasan

* Incinerator incl. sanitary landfill;
TS: Transfer Station, for a transport distance > 30 km

Content of the Presentation

1. Background of the ISWM Masterplan
2. Planning Criteria
3. Proposed Waste Zones
4. Waste Zone Elbasan
   - Regional Investment Measures
   - Investment and Annual Operating Costs for Regional Facilities
   - Investment and Annual Operating Costs for Local Facilities
   - Specific Costs and Household Tariffs

Waste Zone Elbasan

Municipality	Waste Amount (Collected Waste)		
	2022	2027	2032
Belsh	4 t/d	5 t/d	7 t/d
Cërrik	8 t/d	10 t/d	11 t/d
Elbasan	101 t/d	108 t/d	113 t/d
Gramsh	9 t/d	10 t/d	10 t/d
Librazhd	9 t/d	11 t/d	12 t/d
Peqin	8 t/d	9 t/d	10 t/d
Prrenjas	7 t/d	9 t/d	10 t/d
Rrogozhinë	8 t/d	11 t/d	14 t/d
TOTAL	**155 t/d**	**172 t/d**	**188 t/d**

WZ Elbasan: Regional Investment Measures

- Existing and planned regional waste facilities for Waste Zone Elbasan

Waste Zone:	WZ Elbasan		LOAD Default Data	LOAD Saved Data	Delete Saved Data	Save Input

Key Specifications	Phase 1	Phase 2	Phase 3
Population	353,350	345,995	339,593
Collected Municipal Waste Quantity [t/a]	56,612	62,919	68,574
Amount of recycables [t/a]	19,248	21,393	23,315
Amount of organic waste [t/a]	28,306	31,460	34,287
Share of Urban Waste	73%	69%	66%
Inert Waste Quantity [t/a]	74,990	74,285	73,812

Regional Facilities	Priority	Status	Phase 1	Phase 2	Phase 3	Known Costs [EUR]
Long Distance Transport						
Ramp type transfer station			4	Existing	Existing	
Waste Treatment						
Moving grate incineration		Existing	Existing	Existing	Existing	21,666,111
Waste Disposal						
Sanitary Landfill		Existing	Existing	Extension	Extension	

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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WZ Elbasan: Investment Costs for Regional Facilities

Investment costs for regional facilities	WZ Elbasan	Currency EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	800,000		
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation			
MBT with composting			
Anaerobic Digestion (AD)			
Moving grate incineration			
Waste Disposal			
Controlled Landfill			
Sanitary Landfill		4,342,000	4,732,000

Total Investment Costs for Regional Facilities	**800,000**	**4,342,000**	**4,732,000**

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

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WZ Elbasan: Annual Operating Costs for Regional Facilities

Annual operating costs for regional facilities	WZ Elbasan	Currency
		EUR

Regional Facilities	Phase 1	Phase 2	Phase 3
Long Distance Transport			
Ramp type transfer station	88,000	102,000	115,000
Ramp type TS with compaction			
Waste Treatment			
Dirty MRF			
MBT with AD			
MBT with stabilisation			
MBT with composting			
Anaerobic Digestion (AD)			
Moving grate incineration *		unknown	unknown
Waste Disposal			
Controlled Landfill			
Sanitary Landfill			

Total Operating Costs for Regional Facilities	88,000	unknown	unknown

* No gate fees for the duration of concession contract (2017 – 2024); Potential gate fees from 2025 until 2032 are unknown

Phase 1: 2018 – 2022
Phase 2: 2023 – 2027
Phase 3: 2028 – 2032

WZ Elbasan: Investment Costs for Local Facilities

Investment costs for local SWM components	WZ Elbasan	Currency
		EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	118,000	132,000	176,000
Mechanical street sweeping	37,000	75,000	98,000
Waste Collection			
Collection of mixed waste	1,232,000	1,412,000	1,507,000
Collection of organic waste	13,000	12,000	24,000
Collection of dry recyclables	365,000	238,000	246,000
Local Facilities			
Clean MRF			
Windrow composting	46,000	16,000	54,000
Fully automated in-house composting plant			
Landfill rehabilitation			3,368,000
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	976,000	471,000	525,000

Total Investment Costs for Local SWM Components	**2,787,000**	**2,356,000**	**5,998,000**

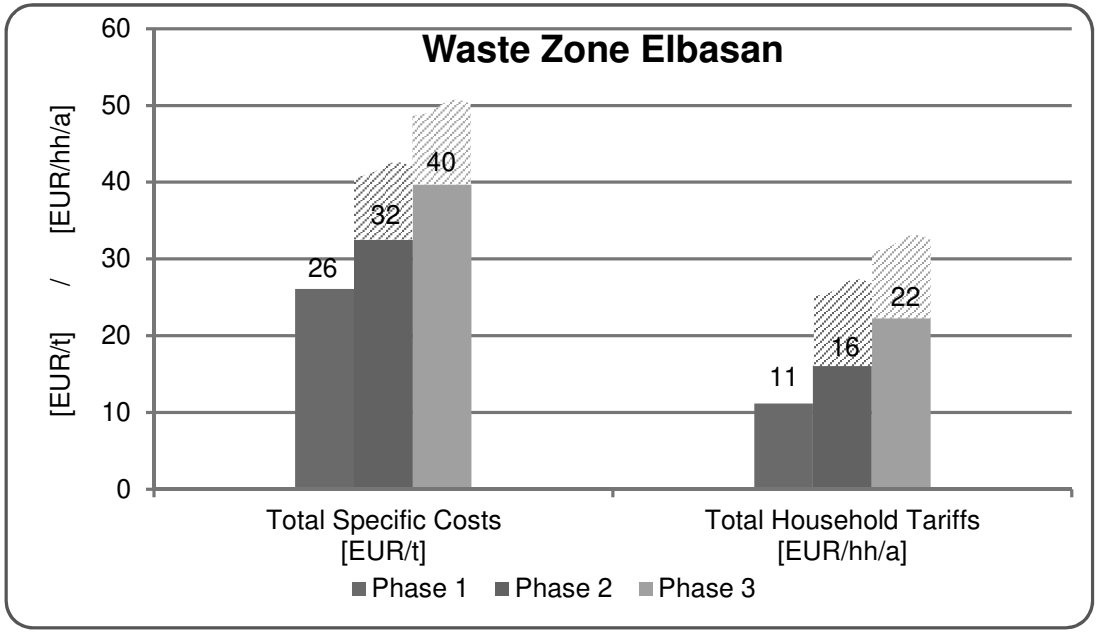
WZ Elbasan: Annual Operating Costs for Local Facilities

Annual operating costs for local SWM components	WZ Elbasan	Currency
		EUR

Local SWM Components	Phase 1	Phase 2	Phase 3
Street Cleaning			
Manual street sweeping	323,600	356,000	425,500
Mechanical street sweeping	33,700	54,000	75,700
Waste Collection			
Collection of mixed waste	573,900	637,800	693,700
Collection of organic waste	4,500	6,100	11,300
Collection of dry recyclables	45,600	53,800	59,200
Local Facilities			
Clean MRF			
Windrow composting	2,000	2,600	4,900
Fully automated in-house composting plant			
Landfill rehabilitation			17,900
Mobile Inert Waste Treatment			
Stationery Inert Waste Treatment			
Inert Waste Landfill	56,500	83,500	113,500

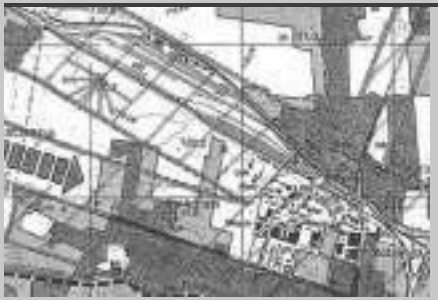
Total Operating Costs for Local SWM Components	**1,039,800**	**1,193,800**	**1,401,700**

WZ Elbasan: Specific Costs and Household Tariffs



Assumptions for tariff calculation:

- SWM costs financed:
  80% by households & 20% by commercial entities
- Fee payment from all households
- Costs for the investment of regional measures and dumpsite rehabilitation are covered from other sources



Thank you very much!

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9.4 Annex 4: Minutes of NGO Meeting

Meeting Notes

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Project:	Elaboration of a Sector Study for Investment Demand in Integrated Solid Waste Management in Albania
Theme/objective:	Consultation meeting on Sector Study for Investment Demand in Integrated Solid Waste Management in Albania within the scope of the Strategic Environmental Assessment (SEA)
Location:	Meeting room, Ministry of Infrastructure and Energy
Date:	Wednesday, 11 July 2018
Time:	See Invitation (Annex 1)
Participants:	See participants list (Annex 2)
Distribution list:	Ministry of Infrastructure and Energy (MoIE) Ministry of Tourism and Environment (MoTE) KfW Development Bank Consultant
Author:	Consultant
Annexes:	1. Invitation 2. Participants List 3. Presentation

1 Welcome Notes

The meeting started with opening remarks from Lindita Sotiri, Director of Water Supply and Solid Waste Programs (MoIE). Participants were self-introduced (the list of participants and contact details are enclosed as Annex 2 to the Meeting Notes).

Gernod Dilewski (IU) welcomed all participants on behalf of the Consultant.

2 Presentation of the Draft ISWM Master Plan within the Scope of the SEA

The Consultant presented the following main topics, related to the overall development of the Master Plan and SEA:

1. Overview of the ISWM Sector Study
2. SEA and Intended Structure of the Environmental Report
3. Stakeholders to Be Included in Further Consultations

Further details are provided in the presentation attached in Annex 3. Throughout the presentation, the participants were invited to provide comments and feedback.

3 Discussion of the Draft ISWM Master Plan

Gernod Dilewski

- Explained the methodology and process of preparing the sector study
- We are only advising for technologies which are proven and have a long-term success record
- The project also included mapping of potential areas for regional waste management centers. Defining the sites of facilities is also a challenging process, where protests are involved – sometimes righteously and sometimes simply NIBMY
- Change in siting processes involve excluding sensitive areas such as river beds, flood areas – so far there is a tradition for dumping at such places, and this approach needs to be changed
- Rehabilitation of existing dump sites is also included since we are talking about the cost of the whole system
- The final product is not only a report but also a practical tool that is given to the ministry and will be annually updated

Isa Memia, MoIE

- This is the first discussion on the SEA
- MoTE has also provided some proposals about topics to be considered for the SEA - institutional issues, nature protection, protected areas, areas important for habitats, detailed information on types of wild flora and fauna, protected species part of the red list, alternatives and exclusion of important habitats, forests and pastures in the territory of Albania, air quality acknowledgment, impact in the water quality system, identify hot spots for water pollution, take into account measures of the national strategy.
- We have invited all civil society associations involved
- 10 days starting from here we will expect your comments and ideas to be taken into account
- The draft SEA report will also be discussed

Albanian Committee of Helsinki:

- We see it from a different perspective and cannot go into technical details. From the legal point of view, we can give some ideas
- If this report brings changes into the legislation, we would be involved
- The recommendations come as part of the monitoring we do
- During the monitoring in Porto Romano, Durres, Kamza, we noted some problems regarding implementation of the legislation
- We recommend that public consultation should not be a formal consultation – the citizens living in the area where a facility will be set up should be informed and guaranteed about the negative and positive impacts
- We could say that State may have shown indifference and at the regional level we have seen that at the moment of contracting, all other provisions are delegated to the private company, and all issues are addressed through the private contractor, which is not correct
- The cooperation between health and environment – institutions should be better coordinated
- At the regional level it cannot be said that there are no resources and responsibility and that Central Government has them
- It remains to be seen in practice how the financing and implementation will be carried out
- Based on the Local Government law, Article 26, describes the competence of the municipalities for environmental protection - we have not been welcomed by the municipalities
- Civil society is coming up with proposals and concerns that should be taken into account and treated seriously

- Porto Romano decided to have an emergency situation but such emergency setting was very much delayed – and in such conditions there should be more reactiveness
- Public consultation should be properly considered
- As soon as there is a draft report to discuss please send it to us and we can come back with recommendations

Isa Memia, MoIE

- Porto Romano is a difficult area and we are looking into the possibility to join efforts with the Tirana facility and together with the MoTE, we hope to complete the rehabilitation of Porto Romano
- Financing is very demanding and there are problems accumulated in many years but the Government is supporting the regional facilities throughout the country
- The management concept presented is at regional level therefore the economy of scale is taken into consideration
- FS in the regions are looking into having in depth consultation
- The Master Plan is at a national level, therefore we are gathered today in the first step of SEA

Lindita Sotiri, MoIE

- The Ministry / Government looks for cooperation with the NGOs so that the awareness is raised as part of the process from the beginning of the study
- For today's meeting we have notified over 20 specialized NGOs and 55 actors and we are aware of the current participation
- We are focusing not only on following all legal processes but also on making sure that we ask for your opinions
- We would appreciate that you make citizens aware of all steps in the process
- There are costs that are going to be included in the tariffs for the citizens, therefore awareness is needed at this planning stage and NGOs specialized in this area are invited to support

Albanian Committee of Helsinki

- The Strasbourg Court (European Court of Human Rights) has discussed several issues and focused on the impacts that the courts have
- Are there any studies that documents the impacts on citizens' health?
- I believe the institutions lack transparency in saying the reality but when it comes to health issues the state should intervene. People complain about various diseases – the effect on health has to be made transparent

Isa Memia, MoIE

- The impacts of bad management are recorded in many documents

Albanian Development Fund

- Brings the instance of Laç Mayor who raised awareness by publicly warning citizens about taking the remaining building blocks from the former superphosphate factory– health is in danger

Lindita Sotiri, MoIE

- We would ask for your support to make the Strasbourg cases known to the public, and as you say transparency should be made regarding health impact
- We could jointly start up a discussion on health impact
- We may also initiate an awareness campaign

Gernod Dilewski

- We are looking into municipal waste management and the Master Plan does not include hazardous waste or hospital waste
- The impact of poor waste management on human health is quite difficult to measure in quantitative terms.
- For example, although it is well known that dumpsites may pollute the ground water, it is difficult to proof how many people actually get sick from the use of this water.

Albanian Development Fund

- Waste management is complicated. It is also dependent on the market of valuable waste
- In the commune, we used to burn waste – as we thought that it was better than taking it to the river and we had no finances to make a better treatment
- Regarding tourism potential, we should note that major impact is caused by the rural areas, not by the dense populated areas
- Costs are the real serious discussion on the masterplan
- With the new landfills being built, it is impossible for the small units to reach to the landfills because transport is not affordable
- Environmental NGOs get involved in consultation only when a certain issue becomes public, the discussion should be held with the citizens. Consultation should be made with the inhabitants who are impacted directly

Gernod Dilewski

- This plan is a starting point for additional projects – the final decision on implementation will be based on further investigations such as feasibility studies
- E.g., in Berat there will be proposed a treatment facility for the whole region, but with the support of SWISS preparation of FS, WMP and in-depth consultations, a phase that comes after the master plan, and which opens the door for further studies and investigations

Public Health Institute

- We see that some participants are more aware about your work while we have just recently been involved
- I work in the air sector and air quality is very important
- there are some types of solid waste that have no value and the government has to take responsibility
- Asbestos is one of the issues – it used to be part of the construction practices and none have an engagement for dealing with asbestos – it demands planning and inspection
- I noticed that 55 actors were invited – I believe that before relying on voluntary contribution, the Government should invite the parties, the Public Health Institute should have been invited for the Incinerator pre-analysis and then after the analysis. We should be able to analyze the impact of the incinerators before and after
- The “polluter pays” principle is set by law, but it should be seen more in depth to recover the environmental impact

Isa Memia, MoIE

- Regarding facilities, the ministry has carried out studies to make sure about the impacts of facilities

National Territory Planning Agency

- We have SEA experience with the 61 municipal plans
- Some other points to be taken into consideration include: risks – flood, landslides, erosion

Some participants

- inquire whether the announcement for the consultation meeting is published on the webpage.

MoIE

- confirms publication

4 Closing of the meeting

Isa Memia, MoIE closed the meeting, thanking the participants for the input and discussion, inviting them to send any written comments before 15th July.

INFRASTRUKTUR & UMWELT
11th July 2018

Gernod Dilewski (Consultant, Team Leader)

Annex 1: Invitation

Ftesë e Ministrisë së Infrastrukturës dhe Energjisë

Lënda: Këshillimi i parë publik mbi procesin e hartimit të Vlerësimit Strategjik Mjedisor në kuadër të hartimit të "Studimit Sektorial mbi Nevojën për Investime në Menaxhimin e Integruar të Mbetjeve të Ngurta në Shqipëri, (Masterplani i Mbetjeve të Ngurta)"

Drejtuar:
Ministrisë së Turizmit dhe Mjedisit
Ministrisë së Shëndetsisë dhe Mbrojtjes Sociale
Ministrisë së Brendshme
Agjensisë Kombëtare të Mjedisit
Agjensisë Kombëtare të Zonave të Mbrojtura
Agjencisë Kombëtare të Planifikimit të Territorit
Instituti i Shëndetit Publik
Qëndra e Transferimit të Teknologjive Bujqësore, Fushë–Krujë

Shoqata Mjedisore dhe Organizata të Shoqwrisë Civile

G&G Group Tiranë
Shoqata Mjedisi në Komunitet
Shoqata Shqipëtare e Biologëve
INCA
Lëvizja Bells
Partners Albania
Universiteti Bujqësorë
Rec Albania
Shoqata për Politika të Rejatë mbrojtjes së Mjedisit
Shoqata e Juristëve Mjedisorë
Shoqata e Bujqësisë Organike
Ekolëvizja
Qëndra EDEN
Organizata MILEU-KONTAKT

Të nderuar Zonja dhe Zotërinj,

Ministria e Infrastrukturës dhe Energjisë dëshiron t'ju ftojë në takimin e parë këshëllimor në kuadër të zhvillimit të procesit të Vlerësimit Strategjik Mjedisor për "Studimit Sektorial mbi Nevojën për Investime në Menaxhimin e Integruar të Mbetjeve të Ngurta në Shqipëri, (Masterplani i Mbetjeve të Ngurta)".

Ky takim do të mbahet më 11 Korrik 2018, prej orës 9.oo – 11.oo, në sallën e Ministrisë së Infrastrukturës dhe Energjisë.

Në bazë të pikës 1 të Nenit 2 të Ligjit Nr. 91/2013 "Për vlerësimin strategjik mjedisor", planet apo programet kombëtare të menaxhimit të mbetjeve i nënshtrohen procesit të Vlerësimit Strategjik Mjedisor. Po kështu në zbatim të pikës 1 të nenit 8 të Ligjit Nr. 91/2013, Ministria e Infrastrukturës dhe Energjisë, në cilësinë e autoritetit propozues, organizon këtë këshillim publik si dhe ofron të gjithë informacionin e kërkuar. Ky informacion i bashkëngjitet kësaj shkrese dhe përmban:

1. Qëllimin e propozimit, shoqëruar me të dhëna të tjera të nevojshme;

2. Arsyetimin për nevojën e hartimit të këtij studimi;

3. Autoritetin miratues të këtij studimi;

4. Procedurën që do të zbatohet për hartimin e këtij studimi, si dhe afatet kohore të parashikuara për këtë.

Bazuar në pikën 1 të Kreut 1 të Vendimit të Këshillit të Ministrave nr. 219 datë 11.03.2015 "Për përcaktimin e rregullave e të procedurave për konsultimin me grupet e interesit dhe publikun, si dhe dëgjesën publike gjatë procesit të vlerësimit strategjik mjedisor", Ministria dërgon propozimin në formë elektronike për nisjen e procesit të VSM-së për mendim tek grupet e interesit dhe i njofton ato për datën, orën dhe vendin e organizimit të takimit, siç përcaktohet në vijim të këtij kreu.

Po kështu, në përputhje më pikën 2 të Kreut I të VKM-së 219 datë 11.03.2015, autoriteti propozues, në bashkëpunim me ministrinë, organizon takimin e thërret për pjesëmarrje grupet e interesit.

Grupe e interesit me të cilat Ministria e Energjisë dhe Infrastrukturës parashikon të këshillohet paraprakisht për paraqitjen e sugjerimeve për cështjet qe ato duan të trajtohen në raportin e VSM-së janë:

- institucionet qendrore të mbrojtjes së shëndetit publik;
- institucionet qendrore të mbrojtjes së tokës bujqësore;
- institucionet qendrore të mbrojtjes së mjedisit, pyjeve dhe ujërave
- shoqatat mjedisore (OJF) aktive në fushën e mbrojtjes së mjedisit dhe të regjistruara sipas legjislacionit në fuqi;
- institucionet e tjera që identifikohen me përgjegjësi në propozim (ministritë etj.).

Ministria e Energisë dhe Infrastrukturës, në cilësinë e autoritetit propozues, merr përsipër zbatimin e ligjit në lidhje me të gjithë procesin e këshillimit me publikun dhe grupet e interesuara, në mënyrë që ky proces të jetë sa me transparent dhe gjithëpërfshirës.

Duke Ju falenderuar për bashkëpunimin mbetemi në pritje të takimit me ju më 11 Korrik 2018, prej orës 9.oo – 11.oo, në sallën e Ministrisë së Infrastrukturës dhe Energjisë.

SEKRETARI I PËRGJITHSHËM

Gentian Këri

Annex 2: Participants List

INFRASTRUKTUR & UMWELT
Professor Böhm und Partner
COWI
FLAG

Workshop for Discussion of the Sector Study within the Scope of the Strategic Environmental Assessment
Tirana, 11 July 2018

No.	EMRI/Name	MBIEMRI/Surname	POZICIONI/Position	INSTITUCIONI/Institution	EMAIL	TELEFON/Phone
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3	Njgjt	Gjoka	Këshilltar Ligjor	Komit Shqiptar Helsinkit	office@ahc.org.al	
4	Pal	Cela	Specialist	F. Sh. ZH	[illegible]	0687169311
5	Gjergji	[illegible]	[illegible]	F. Sh. ZH	[illegible] .org	
6	Engjëll	Melmeda	Kimist	ISHP	engjellmelmeda@yahoo.com	068[illegible]
7	Anila	Mesina	[illegible]	MIE	anila.mesina@infrastruktura.gov.al	068[illegible]
8	Marin	Veizi	Specialist	MIE	marin.veizi@infrastruktura.gov.al	069[illegible]
9	Dena	Bezhani	Spec	MIE	[illegible]	06[illegible]
10	[illegible]	[illegible]	Spec[illegible]	MMAK	[illegible] .gov.al	
11	Imam	[illegible]	[illegible]	Zëri Albania	[illegible]	
12	Jonida	Hamaj Hafizi	Koordinatore [illegible]	Qendra EDEN	jonida.hamaj@eden-al.org	0692003656
13	ELIZA	HAKANI	Koordinatore projekti	Qendra EDEN	[illegible]@eden-al.org	0674030712
14	ERMELEDA	SHKURTA	[illegible]	AKM	[illegible] .gov.al	
15	Ina	Mema	Specialist	MIE	[illegible] .gov.al	0672090110
16	BLEDI	DIMO	[illegible]	AKPT	[illegible] .gov.al	
17						
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19						
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Annex 3: Presentation

THINK CREATIVELY | PLAN FLEXIBLY | IMPLEMENT RELIABLY

Menaxhimi i Integruar i Mbetjeve të Ngurta në Shqipëri -
Kryerja e një Studim Sektori mbi Nevojën për Investime në Menaxhimin e Integruar të Mbetjeve të Ngurta

Seminar për diskutimin e Studimit të Sektorit në kuadër të Vlerësimit Strategjik Mjedisor

Tiranë, 11 Korrik 2018

INFRASTRUKTUR & UMWELT Professor Böhm und Partner COWI FLAG

Përmbajtja e prezantimit

1. Panoramë e përgjithshme e Studimit të Sektorit MIMN
2. VSM dhe struktura e synuar e Raportit Mjedisor
3. Aktorët kryesorë që duhet të përfshihen në konsultimet e mëtejshme
4. Diskutime dhe çështje të tjera

INFRASTRUKTUR & UMWELT Professor Böhm und Partner COWI FLAG

Sfondi i Studimit të Sektorit MIMN

Studimi i Sektorit mbi Nevojën për Investime në Menaxhimin e Integruar të Mbetjeve në Shqipëri

- është përgatitur nga Ministria e Infrastrukturës dhe Energjisë (MIE)

MINISTRIA E INFRASTRUKTURËS DHE ENERGJISË

- financohet nga Banka Gjermane për Zhvillim, KfW

KFW

INFRASTRUKTUR & UMWELT Professor Böhm und Partner COWI FLAG

Sfondi i Studimit të Sektorit MIMN

Objektivat e përgjithshme

- Përveç përmirësimit të **grumbullimit** dhe **depozitimit të mbetjeve**, Shqipëria si vend kandidat për të hyrë në BE ka detyrimin të përmbushë **standardet e BE për MMN**.
- Këto standarde që kanë në fokus **rikuperimin** dhe **trajtimin e mbetjeve** janë transpozuar në legjislacionin shqiptar.
  - Rikuperimi dhe riciklimi i 50% të rrymës së mbetjeve (Strategjia MM)
  - Trajtimi i mbetjeve organike para se të depozitohen (direktiva e BE për vend depozitimet).

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Sfondi i Studimit të Sektorit MIMN

Objektivat specifike

- të përcaktojë metodologjinë dhe teknologjinë e duhur për investimet e ardhshme në sektorin MMN
- të përcaktojë kostot dhe tarifat e duhura
- të ofrojë një plan investimi të ndarë në faza për infrastrukturën vendore dhe rajonale MIMN
- të propozojë ndryshimet e nevojshme ligjore dhe institucionale

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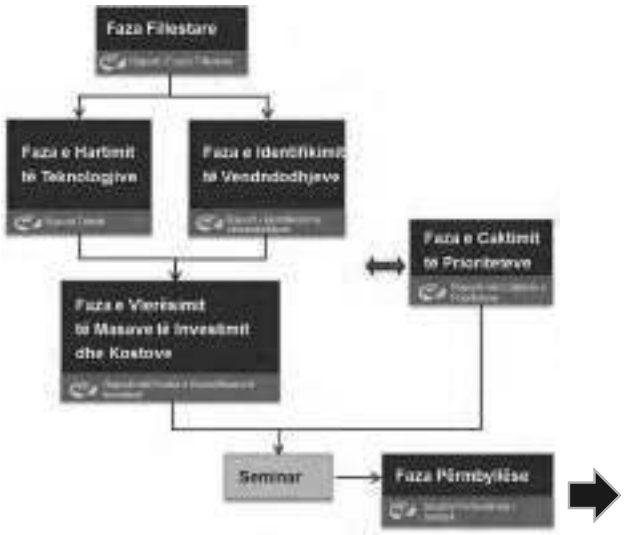
Hapat e punës dhe fazat e Studimit të Sektorit MIMN



Plan investimi për infrastrukturën vendore dhe rajonale MIMN i ndarë në faza afatshkurtër, afatmesëm dhe afatgjatë, për

- grumbullimin dhe transportimin e mbetjeve,
- reduktimin dhe riciklimin e mbetjeve,
- impiante për trajtimin dhe/ose depozitimin e mbetjeve

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Përfshirja e aktorëve kryesorë në Studimin e Sektorit të MIMN

- Në fazën fillestare të projektit janë vizituar të gjitha qarqet, për të diskutuar mbi
  - situatën aktuale të shërbimeve për menaxhimin e mbetjeve
  - sfidat kryesore
  - planet dhe nismat që janë duke u zbatuar

- Është ngritur një grup pune ndër-ministror me përfaqësues nga MIE dhe MTM për përgatitjen Studimit të Sektorit MIMN.

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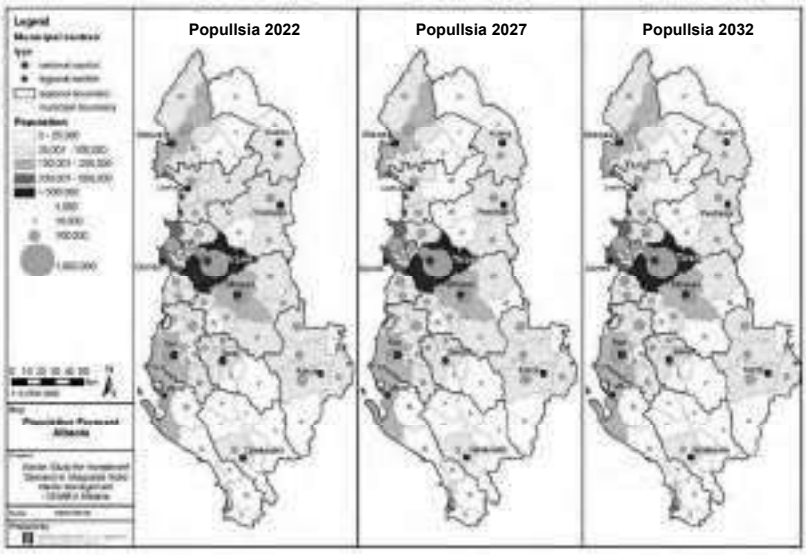
Të dhënat dhe informacioni i dhënë: Parashikimi i numrit të popullsisë



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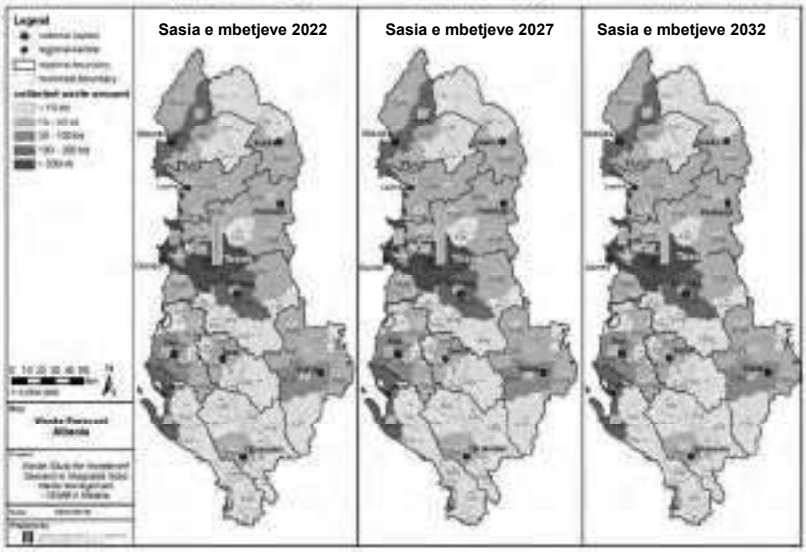
Të dhënat dhe informacioni i dhënë: Parashikimi i sasive të mbetjeve



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Dallimi midis infrastrukturës rajonale dhe vendore të MIMN

Komponentët e mëposhtëm konsiderohen “vendorë”:

- Fshirja e rrugëve dhe grumbullimi i mbetjeve

- Grumbullimi i diferencuar dhe përpunimi i mbetjeve të ricikluesshme dhe mbetjeve organike
- Vend depozitimet për mbetjet e ndërtimeve (mbetje inerte)

- Rehabilitimi i vendgrumbullimeve të mbetjeve

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Dallimi midis infrastrukturës rajonale dhe vendore të MIMN

Komponentët e mëposhtëm konsiderohen “rajonalë”:

- Transferimi dhe transportimi

- Trajtimi i mbetjeve të pariciklueshme (përfshi trajtimin mekanik-biologjik dhe incinerimin)

- Vend depozitimet sanitare

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Impiantet rajonale ekzistuese/ për të cilat është rënë dakord dhe zonat e tyre të mbulimit

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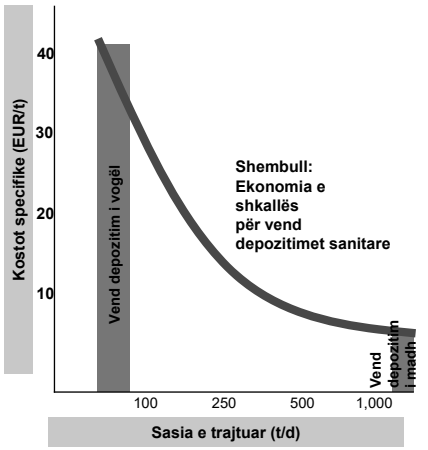
Përcaktimi i kufijve të zonave të mbulimit në nivel kombëtar

- Referencë e përgjithshme: kufijtë e qarkut
- Impiante dhe projekte ekzistuese: zonat ekzistuese të mbulimit
- Projekte që janë në zbatim/ të parashikuara: zonat e ardhshme të mbulimit
- Zonat e tjera që mbeten: përcaktimi i kufijve të zonave të mbulimit duke pasur parasysh ekonominë e shkallës.



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Rekomandime për teknologjitë e investimeve rajonale

Konsiderata të përgjithshme

- Fizibiliteti i provuar (teknologji e provuar, qëndrueshmëri financiare)

Kritere për caktimin e prioriteteve

- Ndikimi i investimit
- Deri në ç'masë kontribuojnë këto masa investimi për një mjedis të pastër dhe të shëndetshëm
- Disponueshmëria e strukturave institucionale për funksionim të qëndrueshëm
- Qëndrueshmëria e performancës dhe financiare e shërbimeve rajonale të menaxhimit të mbetjeve
- Qëndrueshmëria e performancës dhe financiare e shërbimeve vendore të menaxhimit të mbetjeve

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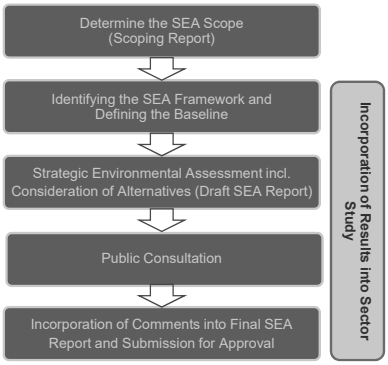
Struktura e synuar e Raportit Mjedisor për VSM

1. Hyrje (procesi i planifikimit, përmbajtja dhe objektivat kyç të Studimit të Sektorit, lidhja me plane dhe programe të tjera)
2. Prezantimi i synimeve për mbrojtjen mjedisore në Shqipëri
3. Gjendja aktuale e mjedisit në Shqipëri dhe perspektivë mbi gjendjen e ardhshme pa zbatimin e Studimit të Sektorit (duke iu referuar të gjitha subjekteve të mbrojtjes)
4. Ndikimi mjedisor i konsiderueshëm i pritshëm nga Studimi i Sektorit
5. Përmbledhje e ndikimeve mjedisore
6. Alternativa
7. Monitorimi dhe masat zbutëse



INFRASTRUKTUR & UMWELT Professor Böhm und Partner COWI FLAG

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Ju faleminderit!

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